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# Contributions to the Flora of Southeast Asia IV : A List of Labiatae Known from Thailand

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CITATION:

Murata, Gen. Contributions to the Flora of Southeast Asia IV : A List of Labiatae Known from Thailand. 東南アジア研究 1971, 8(4): 489-517

ISSUE DATE:

1971-03

URL:

<http://hdl.handle.net/2433/55638>

RIGHT:

## Contributions to the Flora of Southeast Asia

### IV. A List of Labiatae Known from Thailand

by

Gen MURATA\*

The object of this work is to bring together into one list the scattered records of previous papers on Labiatae from Thailand, supplemented by new materials.

In our enumeration, the genera and species are arranged in alphabetical order.

I have examined the specimens kept in the following herbaria, the names of which are cited in this paper by the abbreviations in general use.

AAU: Aarhus University, Denmark.

C : University of Copenhagen, Denmark.

KYO: Kyoto University, Japan.

TI : University of Tokyo, Japan.

Prof. Dr. Bunzo HAYATA collected many specimens in Thailand in 1917 and 1921. His specimens, preserved in the Herbarium of the University of Tokyo, are not yet studied. Prof. Dr. Takasi TUYAMA visited Thailand in 1957-58, and collected many specimens. These also are in the University of Tokyo. Some of those collected by Dr. T. OGAWA, Dr. K. YODA and Mr. MATSUOKA on the Expedition of Osaka City University to Southeast Asia in 1957-61, are preserved in Tokyo, the remainder in the Herbarium of Kyoto University. Dr. M. TAGAWA, Dr. K. IWATSUKI and Mr. N. FUKUOKA of Kyoto University went to Thailand for botanical collecting in 1965-66. In 1967, Dr. M. TAGAWA, Dr. K. IWATSUKI, Dr. T. SHIMIZU, Dr. M. HUTOH, Dr. H. KOYAMA and Mr. N. FUKUOKA again went there. These collections, are preserved in Kyoto, and are cited in this paper as No. T. The specimens collected by the Thai-Danish Botanical Expedition in 1957-68 are preserved in the University of Copenhagen and partly in the Herbarium of Aarhus University.

The present writer is grateful to Prof. Kai LARSEN who sent him on loan the specimens of Labiatae collected by the Thai-Danish Expedition, and to Prof. H. HARA who sent him on loan the specimens of the University of Tokyo.

This research was made possible in part by the Grant in Aid of Scientific Research

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of Ministry of Education, No. 6064 in 1968.

**Achyrospermum** BLUME

**Achyrospermum wallichianum** BENTH. ex HOOK. f. Fl. Brit. Ind. 4: 673 (1885); MUKERJEE, Lab. Ind. 154 (1940); MURATA in HARA, Fl. E. Himal. 270 (1966).

Chiang Mai, Doi Suthep, 1000–1680 m (Dec. 23, 1965 No. *T* 3226), 1100 m (Oct. 28, 1958 *K. Larsen & B. Hansen*, No. 5942 C), 1150 m (Oct. 13, 1958 *K. Larsen & B. Hansen*, No. 5641 C). Ratchaburi, Klang Dong, swamp in evergreen forest, 750 m (Jan. 29, 1962 *K. Larsen*, No. 9364 C). Loei, Phu Kradung, 1100 m (Nov. 30, 1965 No. *T* 898), Phu Luang, from Ban Na Luang to north ridge, 500 m, on dry ground in mixed forest (Dec. 3, 1965 No. *T* 1043). Khao Chong, 800 m, moist slope in deep evergreen forest (Jan. 26, 1966 No. *T* 6737).

Distribution: Sikkim, Bhutan, Khasia, Naga Hills, Burma, and Thailand. This is a new record for Thailand.

**Acrocephalus** BENTH.

**Acrocephalus indicus** (BURM. f.) O. KUNTZE, Rev. Gen. Pl. 2: 512 (1891); MERR. in Philipp. Journ. Sci. Bot. 7: 101 (1912) & Enum. Philipp. Fl. Pl. 3: 421 (1923); KUDO, Lab. Sino-Jap. Prodr. 109 (1929); MUKERJEE, Lab. Ind. 29 (1940).

*Prunella indica* BURM. f. Fl. Ind. 130 (1768).

*Ocimum capitellatum* L. f. Suppl. Pl. 276 (1781).

*O. capitatum* ROTH, Nov. Pl. Sp. 276 (1821).

*O. acrocephalum* BL. Bijdr. 834 (1826).

*Acrocephalus capitatus* (ROTH) BENTH. in WALL. Pl. As. Rar. 2: 18 (1831), Lab. Gen. Sp. 24 (1832), in Hook. Ic. Pl. 5: t. 456 (1842), & in DC. Prodr. 12: 47 (1848); HOOK. f. Fl. Brit. Ind. 4: 611 (1885); HEMSLEY in Journ. Linn. Soc. Bot. 26: 269 (1890); OSTENFELD in Bull. Herb. Boiss. ser. II, 5: 714 (1905); MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. 27: 501 (1910); DUNN in Notes Bot. Gard. Edinb. No. 28: 134 (1915); RIDLEY, Fl. Malay Penins. 2: 644 (1923); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 922 (1936).

*A. blumei* BENTH. Lab. Gen. Sp. 23 (1832).

Mae Hong Son, Ban Nam Pinding (Mar. 8, 1958 *T. Tuyama*, No. 58723 TI). Loei, Nam Thop to Ban Na Luang, E. foot of Phu Luang, 300–400 m (Dec. 8, 1965, No. *T* 1972).

Distribution: India, Burma, Laos, Thailand, N. & S. Vietnam, Cambodia, Malaya, Java, Borneo, and China (Yunnan).

**Ajuga** L.

**Ajuga macrosperma** WALL. ex BENTH. in WALL. Pl. As. Rar. 1: 58 (1830), Lab.

Gen. Sp. 697 (1834), and in DC. Prodr. **12**: 599 (1848); MAXIM. in Mél. Biol. **11**: 823 (1883); HOOK. f. Fl. Brit. Ind. **4**: 704 (1885); DUNN in Notes Bot. Gard. Edinb. No. **28**: 193 (1915); DOAN in LECOMTE, Fl. Gén. Indo-Chine **4**: 1044 (1936), excl. syn.; MUKERJEE, Lab. Ind. 225 (1940).

*A. repens* ROXB. Fl. Ind. **3**: 3 (1832).

Chiang Mai, Khun Klong, 15 km NW of Doi Chiang Dao, 1200 m (Jul. 3, 1968 *K. Larsen, T. Santisuk & E. Warncke, No. 2936* AAU).

In evergreen forest of North Thailand.

Distribution: Himalaya (Kumaon to Bhutan), Assam, Burma, N. Thailand, Laos, N. Vietnam, and China (Yunnan).

#### **Anisochilus** WALL.

**Anisochilus pallidus** WALL. Pl. As. Rar. **2**: 18 (1831); BENTH. Lab. Gen. Sp. 60 (1832), and in DC. Prodr. **12**: 82 (1848); HOOK. f. Fl. Brit. Ind. **4**: 629 (1885); DUNN in Notes Bot. Gard. Edinb. No. **28**: 145 (1915); KUDO, Lab. Sino-Jap. Prodr. 141 (1929); MURATA in HARA, Fl. E. Himal. 272 (1966).

Chiang Mai, Doi Inthanon, 1350–1900 m (Dec. 18, 1965 No. *T 2616*). Doi Chiang Dao (Dec. 8, 1957 *T. Tuyama, No. 57330* TI). Doi Pui, near Ban Pasui, SE of Mae Hong Son (Mar. 16, 1958 *T. Tuyama, No. 68632* TI).

Distribution: E. Himalaya, Burma, N. Thailand, Laos, N. Vietnam, and China (Yunnan).

**Anisochilus siamensis** RIDLEY in Journ. Straits Br. Roy. As. Soc. **1911**: 159 (1911); DOAN in LECOMTE, Fl. Gén. Indo-Chine **4**: 942 (1936).

Distribution: Thailand.

#### **Anisomeles** R. BR.

**Anisomeles candicans** BENTH. in WALL. Pl. As. Rar. **1**: 59 (1830), and in DC. Prodr. **12**: 456 (1848); HOOK. f. Fl. Brit. Ind. **4**: 457 (1885); COLLETT & HEMSL. in Journ. Linn. Soc. Bot. **28**: 116 (1890); MUKERJEE, Lab. Ind. 153 (1940).

Chiang Mai, Doi Suthep (Oct. 20, 1921 *B. Hayata*, TI—Fls. white, purple at the tip), (Oct. 7, 1921 *B. Hayata*, TI). Between Me Kong and Pang Pa Caw (Oct. 29, 1921 *B. Hayata*, TI). Between Pong Pa Paw and Pang Kioh (Oct. 31, 1921 *B. Hayata* TI). Ping Kong, north of Chiang Mai (Oct. 24, 1961 *K. Yoda, No. 904, 905, and 923* TI). Along the highway between Chom Thong and Ban Luang Forest Station, 700–1200 m (Sept. 17, 1967 No. *T 10265*). Doi Chiang Dao, 1100–1800 m (Sept. 13, 1967 No. *T 9936*). Lamphun, en route from Ban Khun Tan to Doi Khun Tan, 1100 m (Sept. 4, 1967 No. *T 9136*).

Grassy slopes or mixed forest at high altitude of Northern Thailand.

Distribution: Upper Burma and N. Thailand (new to Thailand).

**Anisomeles indica** (L.) O. KUNTZE, Rev. Gen. Pl. 512 (1891); MERR. in Philipp. Journ. Sci. I, suppl. 122 (1906), and Enum. Philipp. Fl. Pl. 3: 412 (1923); KUDO, Lab. Sino-Jap. Prodr. 178 (1929); MUKERJEE, Lab. Ind. 178 (1940); MURATA in HARA, Fl. E. Himal. 272 (1966).

*Nepeta indica* L. Sp. Pl. 571 (1753).

**Anisomeles ovata** R. BR. in AIT. Hort. Kew. ed. 2, 2: 364 (1811); BENTH. Lab. Gen. Sp. 703 (1835), in DC. Prodr. 12: 455 (1848), and Fl. Hongk. 278 (1861); MIQ. Fl. Ind. Bat. 2: 975 (1858); HOOK. f. Fl. Brit. Ind. 4: 672 (1885); WIGHT, Ic. pl. 865; HEMSL. in Journ. Linn. Soc. Bot. 26: 299 (1890); OSTENFELD in Bull. Herb. Boiss. ser. II, 5: 714 (1905); MATSUM. & HAYATA, Enum. Pl. Formos. 315 (1906); CRAIB in Kew Bull. 1911: 447 (1911); RIDLEY, Fl. Malay Penins. 2: 649 (1923); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 1013 (1936).

Loei, en route from Nam Thop to Ban Na Luang, eastern foot of Phu Luang, 300–400 m (Dec. 8, 1965, No. *T* 1974 bis.). Between Luong Thabang and Bau Yen (Nov. 18, 1921 *B. Hayata* TI). Between Tha Kaw and Me Sue (Nov. 3, 1921 *B. Hayata* TI).

Distribution: Ceylon, India, Nepal, Burma, Thailand, Laos, N. & S. Vietnam, Cambodia, Malaya, Java, Sumatra, Philippines, Formosa, Ryukyu Isls., and China (Yunnan, Kwantung, Fukien, and Hupeh).

#### **Ceratanthus** MUELL ex G. TAYLOR

**Ceratanthus kerrii** DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 953 (1936).

Distribution: Thailand.

#### **Colebrookia** SMITH

**Colebrookia oppositifolia** SMITH, Exot. Bot. 2: 111, pl. 115 (1805); BENTH. Lab. Gen. Sp. 165 (1833), and in DC. Prodr. 12: 158 (1848); HOOK. f. Fl. Brit. Ind. 4: 642 (1885); CRAIB in Kew Bull. 1911: 447 (1911); DUNN in Notes Bot. Gard. Edinb. No. 28: 147 (1915); KUDO, Lab. Sino-Jap. Prodr. 46 (1929); HAND.-MAZZ. Symb. Sin. 7: 937 (1936); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 962, fig. 101, 6–10 (1936); MUKERJEE, Lab. Ind. 84 (1940); MURATA in HARA, Fl. E. Himal. 272 (1966).

*C. ternifolia* ROXB. Hort. Beng. 45 (1814), Pl. Coromandel. 3: 40, pl. 245 (1819), and Fl. Ind. 3: 25 (1832).

Payap, Pang Mapha, 800 m (Feb. 27, 1968 *B. Hansen & T. Smitinand*, No. 12747 C).

Distribution: India, Himalaya, Burma, Thailand, and China (Yunnan).

#### **Coleus** LOUR.

**Coleus atropurpureus** BENTH. in WALL. Pl. As. Rar. 2: 16 (1831), Lab. Gen. Sp. 54 (1832), and in DC. Prodr. 12: 74 (1848); HOOK. f. Fl. Brit. Ind. 4: 626 (1885);

WILLIAMS in Bull. Herb. Boiss. Ser. II, 5: 430 (1905); MUSCHLER ex Hosseus in Beih. Bot. Centralbl. 27-2: 501 (1910); RIDLEY, Fl. Malay Penins. 2: 646 (1923); DOAN in Lecomte, Fl. Gén. Indo-Chine 4: 958 (1936).

Distribution: Thailand, S. Vietnam, Malay Peninsula & Archipelago, and Polynesia.

**Coleus** (*Solenostemon*) **calcicola** MURATA in Acta Phytotax. Geobot. 24: 105 (1970).

Herba perennis simplex vel pauciramosa erecta 40-60 cm alta, caulibus robustiusculis tetragonis brevissime puberulis, internodiis quam folia brevioribus 2-5 cm longis. Folia petiolata ovato-oblonga 6-12 cm longa 2-5 cm lata subcarnosa, apice acuminata, margine crenato-serrata, basi cuneata, utrinque glanduloso-punctata supra brevissime puberula subtus subglabra saepius purpurea laxe reticulato-venosa; petiolus 1-3 cm longus basi ad caulem pulvinato-articulatus. Inflorescentia racemoso-paniculata ad 15-30 cm longa ramosa pilis brevibus patentibus dense vestita, superne pedicellis pilis glandulosis commixta; verticillastri 2-flori, pedicellis 1-2 mm longis. Bracteae ovatae acutae caducae. Calyx campanulatus 2 mm longus, extus glanduloso-puberulus, intus glaber, fructifer 6 mm longus 5-dentatus, dente supermo rotundato reflexo 2 mm lato, dentibus lateralibus inaequilateraliter late ovatis 2 mm latis apice brevissime acutis, inferioribus subulatis 2.5 mm longis. Corolla 10 mm longa extus glanduloso-punctata, tubo cylindrico declinato ad faucem ampliato decurvo 5 mm longo, labio superiore abbreviato obtuso 3-4 fido, inferiore integro elongato concavo 4.5 mm longo extus glanduloso et puberulo. Stamina 4; filamenta edentula basi in tubum stylem vaginatem connexa. Stylus apice subulatus aequaliter bifidus. Nuculae ellipsoideae 1.5 mm longae atro-brunee laeves.

Chiang Mai, middle elevation of Doi Chiang Dao, 1500 m, crevices in open limestone (Sept. 15, 1967 No. T 10153, Holotypus KYO).

Distribution: Thailand.

**Coleus tuberosus** (BL.) Benth. Lab. Gen. Sp. 59 (1832), non A. Rich. (1847).

*C. parviflorus* Benth. in DC. Prodr. 12: 72 (1848); Hook. f. Fl. Brit. Ind. 4: 625 (1885); DOAN in Lecomte, Fl. Gén. Indo-Chine 4: 957 (1936); Mukerjee, Lab. Ind. 54 (1940); R. C. Backer & v. D. Brink, Fl. Java 2: 637 (1965).

*Plectranthus tuberosus* BL. Bijdr. 838 (1826).

Distribution: India. Cultivated in Thailand.

### **Colquhounia** WALL.

**Colquhounia coccinea** WALL. in Trans. Linn. Soc. 13: 608 (1822); DOAN in Lecomte, Fl. Gén. Indo-Chine 4: 1009 (1936).

var. **mollis** PRAIN in Journ. As. Soc. Bengal 62: 37 (1893); Hosseus in Beih. Bot. Centralbl. 28-2: 430 (1911); Craib in Kew Bull. 1911: 447 (1911); Kudo, Lab. Sino-Jap. Prodr. 181 (1929); Mukerjee, Lab. Ind. 155 (1940).

*C. mollis* Schlecht in Linnaea 24: 681 (1851).

*C. tomentosa* Houlet in Rev. Hort. 1873: 131 (1873).

*Gomphostemma phlomoides* MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. 27-2: 496 (1910), non BENTH.

Chiang Mai, Doi Chiang Dao, 1900-2170 m (Jan. 5, 1966 No. T 4353), same loc. 1600-2100 m (Jan. 4, 1966 No. T 4140).

Distribution: Sikkim, Bhutan, Assam, Upper Burma, N. Thailand, and China (Yunnan).

*Colquhounia elegans* WALL. ex BENTH. in Bot. Reg. 15: sub. pl. 1292 (1829), in WALL. Pl. As. Rar. 3: 43, pl. 268 (1832), Lab. Gen. Sp. 645 (1835), and in DC. Prodr. 12: 457 (1848); HOOK. f. Fl. Brit. Ind. 4: 647 (1885); COLLET & HEMSL. in Journ. Linn. Soc. Bot. 28: 116 (1890); KUDO, Lab. Sino-Jap. Prodr. 179 (1929); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 1009 (1936); MUKERJEE, Lab. Ind. 156 (1940).

*C. elegans* var. *typica* PRAIN in Journ. As. Soc. Bengal 62: 37 (1893); HOSSEUS in Beih. Bot. Centralbl. 28-2: 431 (1911); CRAIB in Kew Bull. 1911: 447 (1911).

*Phlomis albiflora* MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. 27-2: 497 (1910), non HEMSL.

Chiang Mai, Doi Chiang Dao, 1600-2100 m (Jan. 4, 1966 No. T 4153), & (Jan. 3, 1966 No. T 4040), same loc. 1900-2170 m (Jan. 5, 1966 No. T 3453 bis.). Pang Mapha, 780 m (Feb. 25, 1968 B. Hansen & T. Smitinand, No. 12726 C).

Distribution: N. India, Burma, N. Thailand, Laos, N. Vietnam, N. Cambodia, and China (Yunnan, Kweichow, Hupeh).

var. *tenuiflora* (HOOK. f.) PRAIN in Journ. As. Soc. Bengal 62: 38 (1893); HOSSEUS in Beih. Bot. Centralbl. 28-2: 430 (1911); CRAIB in Kew Bull. 1911: 447 (1911); KUDO, Lab. Sino-Jap. Prodr. 180 (1929); MUKERJEE, Lab. Ind. 156 (1940).

*C. tenuiflora* HOOK. f. Fl. Brit. Ind. 4: 674 (1885).

*C. elegans* sensu KURZ, Fl. Brit. Burma 2: 277 (1877).

Chiang Mai, Doi Suthep, 1100 m (Feb. 16, 1958 Ogawa & Yoda, No. 212 TI). Doi Chiang Dao, 1000 m (Feb. 16, 1958 K. Larsen & B. Hansen, No. 1225 C). Between Hoet That and Muong Khu (Feb. 16, 1958 Ogawa, Yoda & Tuyama, No. 212-69 TI).

Distribution: Burma, Thailand, and China (Yunnan).

### **Cymaria BENTH.**

*Cymaria dichotoma* BENTH. in WALL. Pl. As. Rar. 1: 64 (1830), Lab. Gen. Sp. 706 (1836), and in DC. Prodr. 12: 603 (1848); HOOK. f. Fl. Brit. Ind. 4: 705 (1885); RIDLEY, Fl. Malay Penins. 2: 654 (1923); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 1043 (1936); MUKERJEE, Lab. Ind. 227 (1940).

Loei, Pha Nuk Khao, 150-400 m (Sept. 2, 1967 No. T 8708), same Loc. 300 m (Nov. 26, 1956 No. T 298). Ratchaburi, west of Huai Yang, 250 m, dry evergreen forest (Aug. 14, 1966 K. Larsen, T. Smitinand & E. Warncke, No. 1605 AAU). Sam Roy Yot, 100 m, dry limestone hills (Aug. 6, 1966 K. Larsen, T. Smitinand & E.

*Warncke, No. 1180* AAU).

Distribution: Burma, Thailand, Cambodia, Malay Peninsula, Java, and China (Hainan).

### **Dysophylla** BLUME

**Dysophylla auricularia** (L.) BLUME, Bijdr. 826 (1825); BENTH. Lab. Gen. Sp. 158 (1833) and in DC. Prodr. 12: 156 (1848); HOOK. f. Fl. Brit. Ind. 4: 638 (1885); HEMSL. in Journ. Linn. Soc. Bot. 26: 276 (1890); WILLIAMS in Bull. Herb. Boiss. ser. II, 5: 430 (1905); HOSSEUS in Beih. Bot. Centralbl. 27-2: 498 (1910); CRAIB in Kew Bull. 1911: 446 (1911); DUNN in Notes Bot. Gard. Edinb. No. 28: 147 (1915); MERR. Enum. Philipp. Fl. Pl. 3: 415 (1923); RIDLEY, Fl. Malay Penins. 2: 648 (1923); KUDO, Lab. Sino-Jap. Prodr. 47 (1929); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 964 (1936); MUKERJEE, Lab. Ind. 79 (1940).

*Mentha auriculata* L. Mant. pl. 81 (1767).

*Mentha foetida* BURM. f. Fl. Ind. 126 (1768).

*Heliotropium tetrandrum* LOUR. Fl. Cochinch. 103 (1790).

Chiang Mai, Doi Inthanon, 600–1350 m (Dec. 17, 1965 *No. T 2489*). Mae Klang water fall, interior of Chom Thong, 350 m (Dec. 15, 1965 *No. T 222*). Doi Suthep (Oct. 3, 1921 *B. Hayata* TI). Between Pong Pa Pow and Panh Kioh (Oct. 30, 1921 *B. Hayata* TI), Loei, en route from Nam Thop to Ban Na Luang, E. foot of Phu Luang, 300–400 m (*No. T 1967*). Phitsanulok, Tung Salaeng Luang, 700 m, in swamp, open grassy Dipterocarpus-Pine forest (Jul. 21, 1966 *K. Larsen, T. Smitinand & E. Warncke, No. 668* AAU).

Distribution: India, Burma, Thailand, Laos, N. & S. Vietnam, Cambodia, Malaya, Borneo, Philippines, China (Kwantung, Hainan, Yunnan), and Formosa.

**Dysophylla crassicaulis** BENTH. in WALL. Pl. As. Rar. 1: 30 (1830), Lab. Gen. Sp. 159 (1834), and in DC. Prodr. 12: 158 (1848); HOOK. f. Fl. Brit. Ind. 4: 640 (1885); HOSSEUS in Beih. Bot. Centralbl. 28-2: 431 (1911); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 968 (1936); MUKERJEE, Lab. Ind. 82 (1940).

*D. gracilis* sensu MUSCHLER in Beih. Bot. Centralbl. 27-2: 499 (1910), non DALZ.

*Mentha verticillata* D. DON, Prodr. Fl. Nepal. 114 (1825); HOOK. in CURTIS's Bot. Mag. pl. 2907 (1829).

Distribution: India, Burma, Thailand, N. & S. Vietnam, and Cochinchina.

**Dysophylla cruciata** BENTH. in WALL. Pl. As. Rar. 1: 30 (1830), and in DC. Prodr. 12: 157 (1848); HOOK. f. Fl. Brit. Ind. 4: 639 (1885); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 967 (1936); MUKERJEE, Lab. Ind. 80 (1940).

*D. tetraphylla* WIGHT, Ic. pl. 1444 (1850).

*Mentha quadrifolia* D. DON, Prodr. Fl. Nepal. 113 (1825).

Loei, Phu Kradung, 1100–1200 m (Nov. 28, 1965 *No. T 479*).



Distribution: India, Laos, Thailand, Cambodia, and S. Vietnam.

**Dysophylla halferi** HOOK. f. Fl. Brit. Ind. 4: 640 (1885); MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. 27-2: 499 (1910); HOSSEUS in Beih. Bot. Centralbl. 28-2: 431 (1911); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 969 (1936); MUKERJEE, Lab. Ind. 82 (1940).

Distribution: Sikkim, Burma, and Thailand.

**Dysophylla koehneana** MUSCHLER in FEDDE Repert. 4: 269 (1907), and ex HOSSEUS in Beih. Bot. Centralbl. 27-2: 499 (1910); HOSSEUS in Beih. Bot. Centralbl. 28-2: 431 (1911); CRAIB in Kew Bull. 1911: 446 (1911).

Distribution: Thailand.

**Dysophylla linearis** BENTH. in DC. Prodr. 12: 157 (1848); HOOK. f. Fl. Brit. Ind. 4: 639 (1885); MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. 27-2: 299 (1919); MUSCHLER in Beih. Bot. Centralbl. 28-2: 431 (1911); KUDO, Lab. Sino-Jap. Prodr. 48 (1929); MUKERJEE, Lab. Ind. 82 (1940).

*D. martini* VANIOT in Bull. Acad. Géogr. Bot. 14: 178 (1904).

Distribution: Bhutan, Assam, Thailand, and China (Yunnan).

**Dysophylla peguana** PRAIN in Journ. As. Soc. Bengal 59: 299 (1891); OSTENFELD in Bull. Herb. Boiss. ser. II, 5: 714 (1905); MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. 27-2: 499 (1910); KUDO, Lab. Sino-Jap. Prodr. 48 (1929); DOAN in LECOMTE Fl. Gén. Indo-Chine 4: 968 (1936); MUKERJEE, Lab. Ind. 81 (1940).

*D. cruciata* sensu HEMSL. in Journ. Linn. Soc. Bot. 26: 276 (1890); DUNN in Notes Bot. Gard. Edinb. No. 28: 147 (1915), non BENTH.

Distribution: Burma, Thailand, Cambodia, Cochinchina, and China (Hainan).

**Dysophylla pentagona** C. B. CLARKE ex HOOK. f. Fl. Brit. Ind. 4: 641 (1885); HOSSEUS in Beih. Bot. Centralbl. 28-2: 431 (1911); CRAIB in Kew Bull. 1911: 446 (1911); KUDO, Lab. Sino-Jap. Prodr. 49 (1929); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 963 (1936); MUKERJEE, Lab. Ind. 83 (1940).

Chiang Mai, Doi Suthep (Oct. 2, 1921 *B. Hayata* TI), same loc. (May 15, 1958 *K. Larsen & B. Hansen*, No. 3433 C).

Distribution: India, Thailand, Laos, and S. Vietnam.

**Dysophylla verticillata** BENTH. in WALL. Pl. As. Rar. 1: 30 (1830), Lab. Gen. Sp. 158 (1833), and in DC. Prodr. 12: 157 (1848); HOOK. f. Fl. Brit. Ind. 639 (1885); HEMSL. in Journ. Linn. Soc. Bot. 26: 277 (1890); MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. 27-2: 499 (1910); HOSSEUS in Beih. Bot. Centralbl. 28-2: 431 (1911); MERR. Enum. Philipp. Fl. Pl. 3: 416 (1923); KUDO, Lab. Sino-Jap. Prodr. 49 (1929); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 965 (1936); MUKERJEE, Lab. Ind. 81 (1940); HARA, Enum. Sperm. Jap. 1: 202 (1948).

*Mentha verticillata* ROXB. Hort. Bengal 44: (1814), nom. nud., Fl. Ind. ed. 2, 3: 5 (1832), and in CURTIS'S Bot. Mag. pl. 2907 (1829), non L. (1758).

*M. stellata* LOUR. Fl. Cochinch. 1: 361 (1790); MOORE in Journ. Bot. 63: 285 (1925), non *Dysophylla stellata* BENTH.

*Pogostemon verticillatus* (ROXB.) MIQ. Fl. Ind. Bat. 2: 965 (1856).

*Dysophylla japonica* MIQ. Ann. Mus. Bot. Lugd.-Bat. 2: 102 (1865).

*D. benthamiana* HANCE in Ann. Sci. Nat. ser. II, 5: 234 (1866); MERR. in Trans. Amer. Philos. Soc. n. ser. 24: 342 (1935).

*D. fauriei* LÉV. in FEDDE Repert. 9: 248 (1911).

*D. esquirolii* LÉV. in FEDDE Repert. 10: 476 (1912).

Chiang Mai, Meh Tang, 47 km north of Chiang Mai, 420 m (Oct. 19, 1958 *T. Sorensen*, *K. Larsen* & *B. Hansen*, No. 772 C).

Distribution: India, Indo-China, Malaya, Philippines, Australia, China, and Japan.

### **Elsholtzia** WILLD.

**Elsholtzia blanda** (BENTH.) BENTH. Lab. Gen. Sp. 162 (1833), and in DC. Prodr. 12: 160 (1848); HOOK. f. Fl. Brit. Ind. 4: 643 (1885); COLLET & HEMSL. in Journ. Linn. Soc. Bot. 28: 114 (1890); HOSSEUS in Beih. Bot. Centralbl. 28-2: 432 (1911); CRAIB in Kew Bull. 1911: 447 (1911); DUNN in Notes Bot. Gard. Edinb. No. 28: 151 (1915); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 978 (1936); MUKERJEE, Lab. Ind. 89 (1940); MURATA in HARA, Fl. E. Himal. 273 (1966).

*Perilla elata* D. DON, Prodr. Fl. Nepal. 115 (1825).

*Aphanochilus blandus* BENTH. in WALL. Pl. As. Rar. 1: 19 (1830), and in CURTIS'S Bot. Mag. pl. 3091 (1831); KUDO, Lab. Sino-Jap. Prodr. 63 (1929).

*Teucrium quadrifarium* sensu MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. 27-2: 495 (1910), non BUCH.-HAMILT.

Chiang Mai, interior of Ban Luang Lat, 900-1200 m (Dec. 25, 1965 *No. T 3498*). Doi Chiang Dao, 1900-2100 m (Jan. 5, 1966 *No. T 4352*), same loc. (Dec. 8, 1957 *T. Tuyama*, No. 57314 TI). Doi Khun Huai Pong, 1800 m (*B. Hansen* & *T. Smitinand*, No. 12771 C). Doi Chong, northern part, 1800 m (Feb. 19, 1968 *B. Hansen* & *T. Smitinand*, No. 12660 C). Phitsanulok, Phu Rom Rot, one of the peaks of Phu Miang, 1200 m (Oct. 3, 1967 *No. T 11570*).

Distribution: Himalaya (Nepal to Bhutan), Khasia, Burma, Thailand, Laos, N. Vietnam, Sumatra, and China (Yunnan).

**Elsholtzia winitiana** CRAIB in Kew Bull. 1918: 368, f. 102, 1-5 (1918); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 980 (1936).

Chiang Mai, Ban Yang, at middle elevation of Doi Inthanon, 600-1350 m (Dec. 17, 1965 *No. T 2488*). Doi Suthep, 900 m (Mar. 21, 1965 *No. T 79*).

Distribution: S. Vietnam, Laos, and Thailand.

**Geniosporum WALL.**

**Geniosporum coloratum** (D. DON) O. KUNTZE, Rev. Gen. Pl. 2: 517 (1891); BRIQ. in ENGL. & PRANTL, Pfl.-fam. IV, 3 a: 367 (1897); MUKERJEE, Lab. Ind. 32 (1940); MURATA in HARA, Fl. E. Himal. 275 (1966).

*G. strobiliferum* WALL. Pl. As. Rar. 2: 18 (1831); BENTH. Lab. Gen. Sp. 20 (1832), in DC. Prodr. 12: 45 (1848), and in HOOK. Ic. Pl. 5: pl. 462 (1842); HOOK. f. Fl. Brit. Ind. 4: 610 (1885); CRAIB in Kew Bull. 1911: 445 (1911); DUNN in Notes Bot. Gard. Edinb. No. 28: 134 (1915); KUDO, Lab. Sino-Jap. Prodr. 112 (1929); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 925 (1936).

*Plectranthus coloratus* D. DON, Prodr. Fl. Nepal. 116 (1825).

Distribution: India, Burma, Thailand, Laos, and China (Yunnan).

**Geniosporum siamense** MURATA in Acta Phytotax. Geobot. 24: 108 (1970).

Herba perennis 50–70 cm alta. Rhizoma breve crassum lignescens. Caulis erectus simplex vel pauciramosus quadrangularis pilis patentibus breviusculis dense obtecti. Folia opposita breviter petiolata; lamina oblonga 3–6 cm longa 1–2.5 cm lata rugulosa, supra scabroso-pubescent, subtus subvillosa, apice acuta, margine serrata, basi cuneata; petiolis 0.5–1 cm longis. Paniculae angustissimae terminales 6–10 cm longae 1.5–2 cm latae. Cymae contiguae subsessiles. Verticillastris multifloris. Bractee late ovatae 7–20 mm longae 3–10 mm latae albae apice brachycuspiter acuminatae, deciduae. Pedicelli 3–5 mm longi puberuli. Calyx hirsutus tubulosus 2-labiatus declinatus, fructifer 6 mm longus, labio superiore 3-fido, lobo medio latissimo orbiculato reflexo 2.5 mm lato, lateralibus minutis deltoideis, labio inferiore 2-fido, tubo subinflato transverse nervoso. Corolla alba hirsuta calyce fere duplo longior, limbo bilabiato labio superiore 4-fido erecto, inferiore integro declinato. Stamina 4 didynama, declinata, filamentis edentulis. Nuculae ellipsoideae 1.3 mm longae atro-brunneae, apice paucae-papillosae.

Chiang Mai (Sept. 25, 1921 *B. Hayata* TI), Doi Suthep (Oct. 12, 1921 *B. Hayata* TI). Along highway between Mae Sariang and Chom Thong, 1100 m (Sept. 19, 1967, No. *T 10400*, Fr. Holotypus in Herb. KYO). Lamphun, en route from Ban Khun Tan to Doi Khun Tan, ca. 800 m (Sept. 4, 1967, No. *T 9126*, Fl.).

In light deciduous forest.

Distribution: Thailand.

**Geniosporum taylori** DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 925 (1936).

Chiang Mai, Doi Suthep (Oct. 14, 1921 *B. Hayata* TI), same loc. (Dec. 6, 1957 *T. Tuyama*, No. *57209* TI), same loc. 1100–1685 m (Sept. 8, 1967 No. *T 9419 & 9496*).

Fls. white. Fruiting calyx 4–5 mm long, lobes short, subequal.

Distribution: Cambodia and Thailand (new to Thailand).

**Gomphostemma WALL.**

**Gomphostemma crinitum** WALL. ex BENTH. in WALL. Pl. As. Rar. 2: 12 (1831), Lab. Gen. Sp. 648 (1834), and in DC. Prodr. 12: 552 (1848); MIQ. Fl. Ind. Bat. 2: 978 (1858); HOOK. f. Fl. Brit. Ind. 4: 698 (1885); RIDLEY, Fl. Malay Penins. 2: 652 (1923); MUKERJEE, Lab. Ind. 209 (1940).

*G. crinitum* var. *typica* PRAIN in Ann. Bot. Gard. Calc. 3-2: 254, pl. 88 & 89 A (1891).

Phangnga, limestone hill, east of Phangnga, 30-150 m (Aug. 23, 1967 *No. T 7880*). Nakawn Sritamarat, east slope of Khao Luang, 150-1100 m (Jan. 22, 1966 *No. T 5319*, Fr.), interior of Wat Kiri Wang, 100-700 m (Jan. 17, 1966 *No. T 4550*), 750 m (Jan. 25, 1966 *B. Hansen & T. Smitinand, No. 12053 C*), 100-500 m (Feb. 19, 1962 *F. Ogawa, OCKUBE No. 247 KYO*). Trang, lower elevation of Khao Chong, 100-600 m (Jan. 28, 1966 *No. T 6998*).

In evergreen forest of southern Thailand. Fls. yellow.

Distribution: Assam, Burma, Thailand (new to Thailand), and Malay Peninsula.

**Gomphostemma javanicum** (BL.) BENTH. Lab. Gen. Sp. 650 (1853), and in DC. Prodr. 12: 553 (1848); WALP. Rep. 3: 898 (1845); MIQ. Fl. Ind. Bat. 2: 986 (1858); PRAIN in Ann. Bot. Gard. Calc. 3-2: 261, pl. 102 (1891); MUSCHLER ex Hosseus in Beih. Bot. Centralbl. 27-2: 496 (1910); R. C. BACKER & v. D. BRINK, Fl. Jav. 2: 618 (1965).

*Prasium javanicum* BL. Bijdr. 840 (1826).

Distribution: Java and Thailand.

**Gomphostemma lucidum** WALL. ex BENTH. in WALL. Pl. As. Rar. 2: 12 (1831), Lab. Gen. Sp. 848 (1834), and in DC. Prodr. 12: 551 (1884); WALP. Rep. 3: 897 (1845); HOOK. f. Fl. Brit. Ind. 4: 687 (1885); DUNN in Notes Bot. Gard. Edinb. No. 28: 189 (1915); KUDO, Lab. Sino-Jap. Prodr. 273 (1929); MUKERJEE, Lab. Ind. 211 (1940).

*G. lucidum* var. *typica* PRAIN in Ann. Bot. Gard. Calc. 3-2: 697, pl. 94 (1891).

Chiang Mai, Doi Chiang Dao, 500-600 m (Sept. 11, 1967 *No. T 9788 & 9789 Fl.*). Loei, north ridge of Phu Luang, 1100-1500 m (Dec. 4, 1965 *No. T 1248*). Phitsanulok, Tung Salaeng Luang, 600 m (Jul. 19, 1966 *K. Larsen, T. Smitinand & E. Warncke, No. 475 AAU*). Prachuap Khiri Khan, Bang Saphan, 0-150 m (Aug. 20, 1967 *No. T 7801 Fl.*). Prachin Buri, Khao Yai National Park, Kong Keo, 850 m (Jul. 9, 1966 *K. Larsen, T. Smitinand & E. Warncke, No. 160 AAU*). Kao Iotung S. of Pak Thong Chai, 800 m (Aug. 9, 1968 *K. Larsen, T. Santisuk & E. Warncke, No. 3181 AAU*). Tak, Ban Musoe, 750-900 m (Aug. 31, 1967 *No. T. 8627*).

Fls. white. In evergreen forest.

Distribution: Assam, Burma, Thailand, Laos, Vietnam, and China (Yunnan, Hai-

nan).

**Gomphostemma mastersii** BENTH. ex HOOK. f. Fl. Brit. Ind. 4: 699 (1885); PRAIN in Ann. Bot. Gard. Calc. 3-2: 268, pl. 89-b & 99 (1891); MUKERJEE, Lab. Ind. 213 (1940).

Nakawn Sritamarat, Khao Luang, 400 m (Jan. 28, 1966 *B. Hansen & T. Smitinand*, No. 12142 C).

Distribution: Assam and Thailand (new to Thailand).

**Gomphostemma microdon** DUNN in Notes Bot. Gard. Edinb. No. 37: 170 (1913); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 1031 (1936).

Huoi Hai to Naw Tao (Nov. 29, 1921 *B. Hayata* TI). Ban Don Mo to Khon Pai (Nov. 20, 1921 *B. Hayata* TI).

Distribution: Laos, Thailand (new to Thailand), and China (Yunnan).

**Gomphostemma oblongum** WALL. ex BENTH. in WALL. Pl. As. Rar. 2: 12 (1831), Lab. Gen. Sp. 648 (1834), and in DC. Prodr. 12: 551 (1885), p. p.; WALP. Rep. 3: 896 (1845); MIQ. Fl. Ind. Bat. 2: 986 (1858), p. p.; HOOK. f. Fl. Brit. Ind. 4: 697 (1885); PRAIN in Ann. Bot. Gard. Calc. 3-2: 261, pl. 95 (1891); RIDLEY, Fl. Malay Penins. 3: 653, f. 131 (1923); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 1032 (1936); MUKERJEE, Lab. Ind. 211 (1940).

Nakawn Sritamarat, E. slope of Khao Luang, 150-1100 m (Jan. 22, 1966 *No. T 5335 & 5321*). Khao Chong (Feb. 1962 *Ogawa & Yoda*, *OCKUBE No. 771 & 796 KYO*). Khao Luang, 650-950 m (Aug. 24, 1967 *No. T 8461*). 10 km west of Fang, 600 m (Jul. 24, 1968 *K. Larsen, T. Santisuk & E. Warncke*, No. 2636).

Common in evergreen forest. Fls. white.

Distribution: Andaman, Burma, S. Vietnam, Thailand, Cambodia, Malay Peninsula, and Java.

**Gomphostemma parviflorum** WALL. ex BENTH. in WALL. Pl. As. Rar. 2: 12 (1831), in part; HOOK. f. Fl. Brit. Ind. 4: 697 (1885); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 1036 (1936); MUKERJEE, Lab. Ind. 208 (1940).

*G. parviflorum* var. *typica* PRAIN in Ann. Bot. Gard. Calc. 3-2: 252, pl. 86 (1891).

*G. dichotomum* ZOLL. & MOR. Syst. Verz. Zoll. 54 (1854); WALP. Rep. 6: 684 (1845); BENTH. in DC. Prodr. 12: 553 (1848); MIQ. Fl. Ind. Bat. 2: 986 (1858).

Chiang Mai, Doi Chiang Dao, 1100-1800 m (Sept. 13, 1967 *No. T 9922*), 1500 m (Sept. 15, 1967 *No. T 10154*, Fl.). Phitsanulok, Phu Mieng Mountain, 700 m (Jul. 29, 1966 *K. Larsen, T. Smitinand & E. Warncke*, No. 1098 AAU). Near Ban Nam Pind-ing, east of Mae Hong Son (Mar. 8, 1958 *Tuyama*, No. 58743 TI).

In evergreen forest. Fls. yellow.

Distribution: India, Burma, Thailand, Malay Peninsula, and Java.

**Gomphostemma philippinarum** BENTH. in DC. Prodr. 12: 551 (1848); PRAIN in Ann. Bot. Gard. Calc. 3-2: 259, pl. 101 (1891); MERR. in Philipp. Journ. Sci. 2: Bot.

299 (1907), and Enum. Philipp. Fl. Pl. 3: 409 (1923).

*G. oblongum* var. *philippinarum* (BENTH.) WILLIAMS in Bull. Herb. Boiss. ser. II, 5: 429 (1905).

Distribution: Philippines and Thailand.

**Gomphostemma strobilinum** WALL. ex BENTH. in WALL. Pl. As. Rar. 2: 12 (1931), Lab. Gen. Sp. 647 (1834), and in DC. Prodr. 12: 550 (1848); MIQ. Fl. Ind. Bat. 2: 989 (1858); HOSSEUS in Beih. Bot. Centralbl. 28-2: 432 (1911); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 1032 (1936); MUKERJEE, Lab. Ind. 205 (1940).

*G. strobilinum* var. *typica* PRAIN in Ann. Bot. Gard. Calc. 3-2: 246, pl. 76 (1891).

Loei, Phu Kradung, 250-930 m (Sept. 3, 1967 *No. T. 12955*). Phu Luang, 500 m (Dec. 3, 1965 *No. T. 1077*), 600 m (Nov. 27, 1965 *No. T. 571-3*), 1000 m (Nov. 27, 1965 *No. T. 354*). Pha Nuk Khao, 300 m (Nov. 26, 1965 *No. T. 304*). Hard Palom, 250 m (Dec. 25, 1961 *K. Larsen, No. 8953 C*). Bo Luang to Om Koi, 1000 m (Jan. 9, 1964 *B. Hansen, G. Seidenfaden & T. Smitinand, No. 10773 C*).

In deciduous forest mixed with bamboo or pine.

Distribution: Burma, Thailand, and S. Vietnam.

var. **acaulis** PRAIN in Ann. Bot. Gard. Calc. 3-2: 247, pl. 78 (1891); MUKERJEE, Lab. Ind. 205 (1940).

*G. acaulis* KURZ ex HOOK. f. Fl. Brit. Ind. 4: 696 (1885).

Chiang Mai, Doi Chiang Dao (Dec. 7, 1957 *Tuyama, No. 57575 TI*). Doi Suthep (Oct. 11, 1921 *B. Hayata TI*), same loc. (Dec. 6, 1956 *Tuyama, No. 57202 TI*). Chiang Rai, Doi Tung, 900 m (Sept. 26, 1967 *No. T. 11174*). Wang Thao to Ban Hoet, 520-700 m (Feb. 15, 1958 *Ogawa, Yoda & Tuyama, No. 215-30 TI*).

Distribution: Burma and Thailand.

var. **viridis** HOOK. f. Fl. Brit. Ind. 4: 696 (1848); PRAIN in Ann. Bot. Gard. Calc. 3-2: 247, pl. 77 (1891); HOSSEUS in Beih. Bot. Centralbl. 28-2: 432 (1911); CRAIB in Kew Bull. 1911: 448 (1911); MUKERJEE, Lab. Ind. 205 (1940).

*G. viride* WALL. ex BENTH. in WALL. Pl. As. Rar. 2: 12 (1831), Lab. Gen. Sp. 647 (1835), and in DC. Prodr. 12: 550 (1848); WALP. Rep. 3: 896 (1845); MIQ. Fl. Ind. Bat. 2: 989 (1858).

Sai Yok, 250 m, evergreen forest (Dec. 14, 1961 *K. Larsen, No. 8718 C*).

Distribution: India, Burma, and Thailand.

**Gomphostemma wallichii** PRAIN in Journ. As. Soc. Bengal 59: 314 (1890), and in Ann. Bot. Gard. Calc. 3-2: 245, pl. 75 (1891); HOSSEUS in Beih. Bot. Centralbl. 28-2: 432 (1911); CRAIB in Kew Bull. 1911: 448 (1911); MUKERJEE, Lab. Ind. 204 (1940).

*G. dentatum* MUSCHLER in FEDDE Repert. 4: 270 (1907).

*G. strobilinum* var. *elatus* BENTH. in WALL. Pl. As. Rar. 2: 12 (1831).

Chiang Mai, Doi Chiang Dao (Dec. 8, 1957 *Tuyama, No. 57327 TI*) & (Dec. 7, 1957 *Tuyama, No. 57257 TI*). Wang Tao, 800 m (Feb. 13, 1958 *K. Larsen, B. Han-*

*sen*, No. 1133 C). Tham Chiang Dao, 350 m (Feb. 15, 1958 *K. Larsen & B. Hansen*, No. 1133 C). Doi Suthep, 1100–1680 m (Sept. 9, 1967 No. *T 9498*), same loc. (Oct. 3, 1921 *B. Hayata* TI), same loc. 1300 m (Apr. 26, 1958 *K. Larsen & B. Hansen*, No. 3053 C), 1500 m (Sept. 9, 1958 *K. Larsen & B. Hansen*, No. 4874 C), 900 m (Oct. 26, 1958 *K. Larsen & B. Hansen*, No. 5910 C), same loc. (Dec. 6, 1957 *Tuyama*, No. 57218 & 57159 TI), same loc. 1000–1500 m (Dec. 31, 1965 No. *T 3947*). Doi Inthanon, along Nam Mae Klang, 350–600 m (Dec. 16, 1965 No. *T 2295*). Lamphun, Doi Khun Tan, 1200–1374 m (Sept. 12, 1967 No. *T 9564*).

Distribution: Assam, Burma, Thailand, and China (Yunnan).

### **Hyptis** JACQ.

**Hyptis suaveolens** POIT. in Ann. Mus. Paris 7: 472, pl. 29 (1806); BENTH. Lab. Gen. Sp. 124 (1833), and in DC. Prodr. 12: 126 (1848); MIQ. Fl. Ind. Bat. 2: 959 (1858); HOOK. f. Fl. Brit. Ind. 4: 630 (1885); RIDLEY, Fl. Malay Penins. 2: 645 (1923); KUDO, Lab. Sino-Jap. Prodr. 147 (1929); MERR. Enum. Philipp. Fl. Pl. 3: 417 (1923); MATSUM. & HAYATA, Enum. Pl. Formos. 308 (1906); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 961 (1936); MUKERJEE, Lab. Ind. 63 (1940).

Ratchaburi, Prachuap (Aug. 8, 1966 *K. Larsen, T. Smitinand & E. Warncke*, No. 1272 AAU). Phangnga, Khao Tham Thong Lang, Thap Put, 60–250 m (Aug. 24, 1967 No. *T 7976*).

Distribution: Tropical America (native), Africa, India, and S. E. Asia (Malaya to Formosa).

### **Isodon** SCHRADER ex KUDO

**Isodon coetsa** (HAMILT.) KUDO, Lab. Sino-Jap. Prodr. 131 (1929); KITAMURA & MURATA in KIHARA, Fauna & Fl. Nepal Himal. 1: 212 (1955); MURATA in HARA, Fl. E. Himal. 275 (1966).

*Plectranthus coetsa* HAMILT. ex D. DON, Prodr. Fl. Nepal. 117 (1825); BENTH. in WALL. Pl. As. Rar. 2: 17 (1831), Lab. Gen. Sp. 42 (1832), and in DC. Prodr. 12: 58 (1848); HOOK. f. Fl. Brit. Ind. 4: 619 (1885); DUNN in Notes Bot. Gard. Edinb. No. 28: 142 (1915); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 945 (1936); HAND.-MAZZ. in Acta Hort. Gotob. 13: 377 (1939); MUKERJEE, Lab. Ind. 44 (1940).

*Ocimum coetsa* SPRENG. Syst. Veg. 4, Cur. Post. 223 (1827).

*Scutellaria japonica* BURM. f. Fl. Ind. 130 (1768).

*Plectranthus menthoides* BENTH. in WALL. Pl. As. Rar. 2: 17 (1831), Lab. Gen. Sp. 42 (1832), and in DC. Prodr. 12: 59 (1848); HOOK. f. Fl. Brit. Ind. 4: 620 (1885); HOSSEUS in Beih. Bot. Centralbl. 28-2: 434 (1911).

*P. macraei* BENTH. Lab. Gen. Sp. 42 (1832), and in DC. Prodr. 12: 59 (1848); WIGHT, Ic. pl. 1430 (1850).

*P. leptobotrys* DIELS in Bot. Jahrb. ENGL. **29**: 561 (1901).

*Salvia moocraftiana* sensu MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. **27-2**: 498 (1910), non WALL.

*P. rugosa*  $\beta$ . *tomentosa* BENTH. in WALL. Pl. As. Rar. **2**: 17 (1831).

*P. cavaleriei* LÉV. in FEDDE Repert. **9**: 247 (1911).

Chiang Mai, Doi Chiang Dao, 1900–2175 m (Jan. 5, 1966 *No. T 4366*). Doi Inthanon, 1350–1900 m (Dec. 18, 1965 *No. T 2603*).

Distribution: India, Ceylon, Burma, Thailand, Laos, N. Vietnam, and China (Yunnan and Szechuan).

**Isodon hispidus** (BENTH.) MURATA in Acta Phytotax. Geobot. **24**: 82 (1969).

*Plectranthus hispidus* BENTH. in WALL. Pl. As. Rar. **2**: 17 (1831), Lab. Gen. Sp. 41 (1832), and in DC. Prodr. **12**: 57 (1848); HOOK. f. Fl. Brit. Ind. **4**: 619 (1885); COLLETT & HEMSL. in Journ. Linn. Soc. Bot. **28**: 113 (1890); HOSSEUS in Beih. Bot. Centralbl. **28-2**: 434 (1911); MUKERJEE, Lab. Ind. 42 (1940).

*P. scrophularioides* sensu MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. **27-2**: 500 (1910), non WALL.

Distribution: Assam, Burma, and Thailand.

**Isodon nigropunctatus** MURATA in Acta Phytotax. Geobot. **24**: 108 (1970).

*Plectranthus* sp. HOSSEUS in Beih. Bot. Centralbl. **28-2**: 434 (1911)?

Herba perennis, fere omnino pubescens. Caulis erectus 50–110 cm altus simplex vel ramosus quadrangularis tomentosus vel villosus; internodia media 3–5 cm longa ca. 3 mm crassa. Folia petiolata; lamina ovata vel late ovata 4–9 cm longa crenato-serrata apice acuminata basi sub truncata supra hispida subtus pubescens et glanduloso nigro-punctata nervis reticulatis prominulis, petiolis 1–4 cm longis. Folia floralia gradatim minora sessilia. Inflorescentia paniculata ramosa 30–40 cm longa multiflora; pedunculis 1–1.5 cm longis, pedicellis gracilibus 3–6 mm longis pubescentibus. Bractee minutae. Calyx subcampanulatus 2 mm longus intus glaber extus glanduloso nigro-punctatus et pilis longis articulatis eglandulosis dense obtectus, apice subaequaliter 5-dentatus, dentibus ca. 1 mm longis acutis, fructifer tubuloso-campanulatus 4–4.5 mm longus subcurvatus, nervis prominulis. Corolla 6–7 mm longa, glabra bilabiata, pallide purpurea, tubo 3.5–4 mm longo stricto, labio superiore 4-fido erecto purpureo maculato extus glanduloso nigro-punctato, labio inferiore 2.5 mm longo late ovato. Stamina 4, longe exserta, filamentis glabris. Nuculae ellipsoideae 1 mm longae 0.5 mm latae brunneae laeves.

Chiang Mai, Doi Chiang Dao, 2000 m, grassy slope in light shade (Jan. 4, 1965 *No. T 4145* Holotypus KYO). Doi Suthep, 1000–1685 m (Dec. 23, 1965 *No. T 3245*), same loc., 1500 m (Dec. 21, 1958 *T. Sorensen, K. Larsen, & B. Hansen, No. 6518 C*).

Allied to *Isodon hispidus* (BENTH.) MURATA from Assam and upper Burma, but markedly different by the much larger flowers with long exserted stamens and the form of the leaf base, which is truncate and not decurrent into the petiole.



Distribution : Thailand.

**Isodon racemosus** (HEMSL.) MURATA, comb. nov.

*Plectranthus racemosus* HEMSL. in Journ. Linn. Soc. Bot. 26 : 273 (1890) ; MUSCHLER ex Hosseus in Beih. Bot. Centralbl. 27-2 : 500 (1910) ; Hosseus in Beih. Bot. Centralbl. 28-2 : 434 (1911) ; DOAN in Lecomte, Fl. Gén. Indo-Chine 4 : 950 (1936).

Chiang Mai, Doi Chiang Dao, 500-1600 m (Jan. 3, 1966 No. T 4049).

Distribution : Thailand and China (Szechuan and Hupeh).

**Isodon striatus** (Benth.) Kudo, Lab. Sino-Jap. Prodr. 134 (1929) ; MURATA in HARA, Fl. E. Himal. 277 (1966).

*Plectranthus striatus* Benth. in Wall. Pl. As. Rar. 2 : 17 (1831), and in DC. Prodr. 12 : 56 (1848) ; Hook. f. Fl. Brit. Ind. 4 : 618 (1885) ; Collett & Hemsl. in Journ. Linn. Soc. Bot. 28 : 113 (1890) ; Muschler ex Hosseus in Beih. Bot. Centralbl. 27-2 : 500 (1910) ; Dunn in Notes Bot. Gard. Edinb. No. 28 : 139 (1915) ; Doan in Lecomte, Fl. Gén. Indo-Chine 4 : 948 (1936) ; Hand.-Mazz. in Acta Hort. Gotob. 13 : 378 (1939) ; Mukerjee, Lab. Ind. 43 (1940).

*P. gerardianus* Benth. in Wall. Pl. As. Rar. 2 : 17 (1831), Lab. Gen. Sp. 40 (1832), and in DC. Prodr. 12 : 56 (1848) ; Hook. f. Fl. Brit. Ind. 4 : 617 (1885) ; Muschler ex Hosseus in Beih. Bot. Centralbl. 27-2 : 499 (1910).

*P. oblongifolius* Wall. Pl. As. Rar. 2 : 17 (1831) ; Benth. Lab. Gen. Sp. 40 (1832) and in DC. Prodr. 12 : 56 (1848).

*P. gerardianus* var. *brachyantha* Hook. f. Fl. Brit. Ind. 4 : 618 (1885).

Chiang Mai, Doi Suthep (Oct. 7, 1921 B. Hayata TI), (Oct. 9, 1921 B. Hayata TI), (Oct. 14, 1921 B. Hayata TI), and (Oct. 19, 1921 B. Hayata TI), same loc. (Dec. 6, 1957 Tuyama, No. 57091 TI), same loc. (Dec. 21, 1958 T. Sorensen, K. Larsen & B. Hansen, No. 6518 C). Ban Yang, Doi Inthanon, 600-1350 m (Dec. 17, 1965, No. T 2502). Pah Hom Pok, 1200 m (Feb. 25, 1958 T. Sorensen, K. Larsen & B. Hansen, No. 1624 C). Between Pa Mon and Sop Aep (Jan. 11, 1958 H. Ogawa & K. Yoda, No. 11116 TI). Near Ban Nam Pinding (Mar. 8, 1958 Tuyama, No. 58739 TI). Pong Kioh to Me Ka Chau (Oct. 31, 1921 B. Hayata TI). Pong Pa Paw to Pang Kioh (Oct. 30, 1921 B. Hayata TI). Loei, Phu Kradung, 1200 m (Nov. 30, 1965 No. T 907), same loc., 1100-1200 m (Nov. 28, 1965 No. T 492). Phu Luang, 1300-1562 m (Dec. 5, 1965 No. T 1602). Phitsanulok, Phu Rom Rot, one of the peaks of Phu Miang, 1300 m (Oct. 3, 1967 No. T 11560).

Distribution : Himalaya (Kashmir to Assam), Burma, Laos, Thailand, Vietnam, and China (Yunnan, Kweichow and Kwangtung).

var. **kerrii** Doan in Lecomte, Fl. Gén. Indo-Chine 4 : 948 (1936).

Distribution : Thailand.

**Isodon ternifolius** (D. Don) Kudo, Lab. Sino-Jap. Prodr. 140 (1929) ; MURATA in HARA, Fl. E. Himal. 227 (1966).

*Plectranthus ternifolius* D. DON, Prodr. Fl. Nepal. 117 (1825); BENTH. in WALL. Pl. As. Rar. 2: 17 (1831), Lab. Gen. Sp. 44 (1832), and in DC. Prodr. 12: 61 (1848), Hook. Ic. Pl. 5: pl. 460 (1842); Hook. f. Fl. Brit. Ind. 4: 674 (1885); DUNN in Notes Bot. Gard. Edinb. No. 28: 138 (1915); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 944 (1936); HAND.-MAZZ. in Acta Hort. Gotob. 13: 363 (1939); MUKERJEE, Lab. Ind. 40 (1940).

*Ocimum ternifolium* SPRENG. Syst. Veg. 4. Cur. Post. 224 (1827).

*Elshortia thompsonii* HOOK. f. Fl. Brit. Ind. 4: 643 (1885).

*E. lychnitis* LÉV. et VAN. in FEDDE Repert. 8: 425 (1910).

*Plectranthus hosseusii* MUSCHLER in FEDDE Repert. 4: 268 (1907); HOSSEUS in Beih. Bot. Centralbl. 28-2: 433 (1911).

Chiang Mai, Doi Suthep, 1000 m (Feb. 12, 1958 *Ogawa & Yoda*, No. 21216 TI), same loc., 1400 m (Jul. 28, 1968 *K. Larsen, T. Santisuk & E. Warncke*, No. 2784). Doi Inthanon, 1350-1900 m (Dec. 18, 1965 No. T 2610, 2611 & 2612). Pa Mon to Sop Aep (Jan. 11, 1958 *Ogawa & Yoda*, No. 111-4 TI). Pa Mon, 1350 m (Jan. 8, 1958 *Ogawa & Yoda*, No. 108-4 TI). Between Taktoong and Huoitet (Dec. 15, 1921 *B. Hayata* TI). Between Pang Kioh and Mae Chan (Oct. 31, 1921 *B. Hayata* TI).

Distribution: India, Burma, Thailand, Laos, N. Vietnam, and China (Yunnan, Kweichow, Kwangsi, and Kangtung).

**Isodon volkensianus** (MUSCHLER) MURATA, comb. nov.

*Plectranthus volkensianus* MUSCHLER in FEDDE Repert. 4: 268 (1907); MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. 27-2: 500 (1910); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 947 (1936).

*Plectranthus striatus* sensu HOSSEUS in Beih. Bot. Centralbl. 28-2: 434 (1911), non BENTH.

Distribution: Thailand.

### **Leucas R. Br.**

**Leucas aspera** (WILLD.) LINK, Enum. Hort. Berol. 2: 113 (1822); SPRENG. Syst. Veg. 2: 743 (1825); BENTH. Lab. Gen. Sp. 615 (1834), in DC. Prodr. 12: 532 (1848); MIQ. Fl. Ind. Bat. 2: 982 (1858); Hook. f. Fl. Brit. Ind. 4: 690 (1885); OSTENFELD in Bull. Herb. Boiss. ser. II, 5: 714 (1905); HOSSEUS in Beih. Bot. Centralbl. 28-2: 432 (1911); CRAIB in Kew Bull. 1911: 447 (1911); MERR. Enum. Philipp. Fl. Pl. 3: 410 (1923); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 1019 (1936); MUKERJEE, Lab. Ind. 166 (1940); R. C. BACKER & v. D. BRINK, Fl. Jav. 2: 623 (1965).

*Phlomis aspera* WILLD. in LINK, Enum. Hort. Berol. 2: 621 (1822).

*Leucas pluknetii* (ROTH) SPRENG. Syst. Veg. 2: 743 (1825); BENTH. in WALL. Pl. As. Rar. 1: 60 (1830).

*L. dimidiata* BENTH. in DC. Prodr. 12: 532 (1848).

*Phlomis pluknetii* ROTH, Nov. Pl. Sp. 261 (1821).

*P. esculenta* ROXB. Fl. Ind. 3: 10 (1832).

Distribution: India, Burma, Thailand, Cambodia, Vietnam, Java, and Philippines.

**Leucas ciliata** BENTH. in WALL. Pl. As. Rar. 1: 61 (1830), Lab. Gen. Sp. 614 (1834), and in DC. Prodr. 12: 530 (1848); HOOK. f. Fl. Brit. Ind. 4: 687 (1885); DUNN in Notes Bot. Gard. Edinb. No. 28: 184 (1915); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 1021 (1936); MUKERJEE, Lab. Ind. 174 (1940).

Chiang Mai, Doi Chiang Dao, 1900-2175 m (Sept. 14, 1967 No. T 10063). Loei, Phu Kradung, 1100-1200 m (Nov. 28, 1965 No. T 488) & (Sept. 4, 1967 No. T 8873).

Distribution: India, Nepal, Sikkim, Bhutan, Burma, Thailand, Laos, N. Vietnam, and China (Yunnan).

**Leucas flaccida** R. BR. Prodr. 505 (1810); BENTH. Lab. Gen. Sp. 609 (1834), and in DC. Prodr. 12: 526 (1848); HOOK. f. Fl. Brit. Ind. 4: 684 (1885); MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. 27-2: 497 (1910); MUKERJEE, Lab. Ind. 179 (1940).

*L. parviflora* BENTH. in WALL. Pl. As. Rar. 1: 62 (1830).

*L. melissaefolia* BENTH. in WALL. Pl. As. Rar. 1: 62 (1830).

*Phlomis moluccana* ROXB. Hort. Bengal. 95 (1814), and Fl. Ind. 3: 11 (1832).

Chiang Mai (Dec. 7, 1957 Tuyama, No. 57235 TI).

Distribution: Burma, Thailand, Malaya, Pacific Islands, and Australia.

**Leucas lanata** BENTH. in WALL. Pl. As. Rar. 1: 61 (1830), Lab. Gen. Sp. 607 (1834), and in DC. Prodr. 12: 525 (1848); HOOK. f. Fl. Brit. Ind. 4: 681 (1885); CRAIB in Kew Bull. 1911: 448 (1911); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 1022 (1936); MUKERJEE, Lab. Ind. 178 (1940).

*L. collina* DALZ. in HOOK. Kew Journ. 2: 338 (1850).

*Marrubium mollissimum* D. DON, Prodr. Fl. Nepal. 112 (1825).

Chiang Mai, Doi Chiang Dao, 1600-2100 m (Jan. 4, 1966 No. T. 4147).

Distribution: India, Burma, and Thailand.

**Leucas lamioides** (MUSCHLER) HOSSEUS in Beih. Bot. Centralbl. 28-2: 432 (1911); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 1024 (1936).

*Marrubium lamioides* MUSCHLER in FEDDE Repert. 4: 296 (1907), & in Beih. Bot. Centralbl. 27-2: 490 (1910).

Distribution: Thailand.

**Leucas lavandulaefolia** SMITH in REES, Cyclop. 20: 2 (1812); PRAIN in Journ. As. Soc. Bengal 74: 699 (1907); MERR. Fl. Manila 412 (1912); DUNN in Notes Bot. Gard. Edinb. No. 28: 184 (1915); RIDLEY, Fl. Malay Penins. 2: 650 (1923); MERR. Enum. Philipp. Fl. Pl. 3: 411 (1923); KUDO, Lab. Sino-Jap. Prodr. 208 (1929); MUKERJEE, Lab. Ind. 167 (1940); MURATA in HARA, Fl. E. Himal. 277 (1966).

*L. linifolia* (ROTH) SPRENG. Syst. Veg. 2: 743 (1825); BENTH. in WALL. Pl. As. Rar. 1: 60 (1830), Lab. Gen. Sp. 617 (1834), and in DC. Prodr. 12: 533 (1848); MIQ.

Fl. Ind. Bat. **2**: 983 (1858); Hook. f. Fl. Brit. Ind. **4**: 690 (1885); CRAIB in Kew Bull. **1911**: 448 (1911).

*Phlomis linifolia* ROTH, Nov. Pl. Sp. 260 (1821).

*Leonurus indicus* BURM. f. Fl. Ind. 127 (1768).

Distribution: India, Burma, Thailand, Malaya, Philippines, Java, Madagascar, and China (Kwangtung).

**Leucas mollissima** WALL. Pl. As. Rar. **1**: 62 (1830); BENTH. Lab. Gen. Sp. 607 (1834), and in DC. Prodr. **12**: 525 (1848); Hook. f. Fl. Brit. Ind. **4**: 682 (1885); DIELS in Bot. Jahrb. ENGL. **29**: 555 (1900); DUNN in Notes Bot. Gard. Edinb. No. **28**: 184 (1915); MERR. Enum. Philipp. Fl. Pl. **3**: 411 (1923); KUDO, Lab. Sino-Jap. Prodr. 207 (1929); DOAN in LECOMTE, Fl. Gén. Indo-Chine **4**: 1023 (1936); MUKERJEE, Lab. Ind. 183 (1940).

Chiang Mai, Doi Suthep (Dec. 6, 1957 *Tuyama*, No. **57191** TI). Doi Chiang Dao (Dec. 8, 1957 *Tuyama*, No. **57317** TI). Between Chom Thong and Ban Luang Forest Station, 700–1200 m (Sept. 17, 1967 No. **T 10269**). Loei, Phu Kradung, 1100–1200 m (Nov. 28, 1965 No. **T 474**). Between Pa Mon and Sop Aep (Jan. 11, 1958 *H. Ogawa & K. Yoda*, No. **111–13** TI). Between Tak and Sukhothai (Feb. 2, 1958 *H. Ogawa, K. Yoda & Tuyama* TI).

Distribution: India, Nepal, Burma, Thailand, Laos, Malaya, Vietnam, and China (Yunnan & Hupeh).

var. **scaberula** Hook. f. Fl. Brit. Ind. **4**: 184 (1885); MUKERJEE, Lab. Ind. 184 (1940); MURATA in HARA, Fl. E. Himal. 278 (1966).

Chiang Mai, Ban Yang, Doi Inthanon, 600–1350 m (Dec. 17, 1965 No. **T 2477**). Mae Klang to Ban Yang, 350–600 m (Dec. 16, 1965 No. **T 2290**). Ping Kong (Oct. 24, 1961 *K. Yoda*, No. **930**). Chiang Rai, Doi, Pa Hom Pok, northwest of Phan, 600 m (Sept. 11, 1967 No. **T 9548**).

Distribution: Nepal, Sikkim, Burma, and Thailand (new to Thailand).

**Leucas teres** BENTH. in WALL. Pl. As. Rar. **1**: 62 (1830), Lab. Gen. Sp. 608 (1834), and in DC. Prodr. **12**: 526 (1848); Hook. f. Fl. Brit. Ind. **4**: 680 (1885); MUKERJEE, Lab. Ind. 179 (1940).

Ratchaburi, Sam Roy Yot, 50 m (Aug. 6, 1966 *K. Larsen, T. Smitinand & E. Warncke*, No. **1192** AAU).

Distribution: Burma and Thailand (new to Thailand).

**Leucas zeylanica** (L.) R. BR. Prodr. 504 (1810) & in Ait. Hort. Kew. ed. 2, **3**: 409 (1811); SPRENG. Syst. Veg. **2**: 742 (1825); BENTH. in WALL. Pl. As. Rar. **1**: 60 (1830), Lab. Gen. Sp. 614 (1834), and in DC. Prodr. **12**: 531 (1848); Hook. f. Fl. Brit. Ind. **4**: 689 (1885); RIDLEY, Fl. Malay Penins. **2**: 650 (1923); MERR. Enum. Philipp. Fl. Pl. **3**: 411 (1923); KUDO, Lab. Sino-Jap. Prodr. 208 (1929); DOAN in LECOMTE, Fl. Gén. Indo-Chine **4**: 1020 (1936); MUKERJEE, Lab. Ind. 171 (1940); R. C. BACKER

& v. d. BRINK, Fl. Jav. 2: 623 (1965).

*Phlomis zeylanica* L. Sp. Pl. 820 (1753).

*Leucas ciliata* sensu DUNN in Notes Bot. Gard. Edinb. No. 28: 184 (1915), non BENTH.

Chiang Mai (Sept. 24, 1921 *B. Hayata* TI). Nakawn Sritamarat, Wat Kiri Wang, at the foot of Khao Luang, 90-200 m (Jan. 23, 1966 *No. T 5375*). Phitsanulok, Tung Salaeng Luang National Park, 500 m (Sept. 30, 1967 *No. T 11293*). Mae Lao (Jan. 29, 1958 *Tuyama, No. 129-3* TI). Ko Yao Yai, 5 m (Feb. 21, 1966 *B. Hansen & T. Smitinand, No. 12415* C).

Distribution: India, Ceylon, Indo-China, Malay Peninsula and Islands, Java, and China (Yunnan, Hainan, and Kwangtung).

#### **Mesona** BL.

**Mesona cambodgensis** DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 928 (1936).

Distribution: Cambodia, Thailand, and Cochinchina.

**Mesona rubra** DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 932 (1936).

Distribution: Thailand and Laos.

#### **Microtoena** PRAIN

**Microtoena insuavis** (HANCE) PRAIN ex BRIQ. in ENGL. & PRANTL, Pfl.-fam. IV, 3 a: 269 (1897); KOORD. Exkur.-fl. Java 3: 148 (1912); DUNN in Notes Bot. Gard. Edinb. No. 28: 188 (1915); KUDO, Lab. Sino-Jap. Prodr. 183 (1929); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 1017 (1936); MUKERJEE, Lab. Ind. 186 (1940); MURATA in HARA, Fl. E. Himal. 279 (1966).

*M. cymosa* PRAIN in HOOK. Ic. Pl. 19: pl. 1872 (1889) & in Journ. As. Soc. Bengal 59: 310 (1890); HEMSL. in Journ. Linn. Soc. Bot. 26: 306 (1890); COLLETT & HEMSL. in *op. cit.* 28: 116 (1890).

*M. esquirolii* LÉV. in FEDDE Repert. 9: 222 (1910).

*M. mollis* LÉV. in FEDDE Repert. 9: 222 (1910).

*Gomphostemma insuave* HANCE in Journ. Bot. London 22: 231 (1884).

*Plectranthus patchouli* C. B. CLARKE in HOOK. f. Fl. Brit. Ind. 4: 624 (1885).

Chiang Rai, interior of Ban Lang Lat, Nam Mae Lao, 900-1200 m (Dec. 25, 1965 *No. T 3499*). Udawn, Loei, north ridge of Phu Luang, 1100-1500 m (Dec. 4, 1965 *No. T 1240*).

Distribution: Himalaya (Nepal to Assam), Thailand, Vietnam, Malaya, Java, and China (Yunnan, Kweichaw, and Kwangtung).

#### **Moschosma** REICHENB.

**Moschosma polystachyum** (L.) BENTH. in WALL. Pl. As. Rar. 2: 13 (1831), Lab.

Gen. Sp. 24 (1832), and in DC. Prodr. **12**: 48 (1848); MIQ. Fl. Ind. Bat. **2**: 942 (1858); HOOK. f. Fl. Brit. Ind. **4**: 612 (1835); HEMSL. in Journ. Linn. Soc. Bot. **26**: 269 (1890); THISELT.-DYER, Fl. Trop. Afr. **5**: 353 (1900); DUNN in Notes Bot. Gard. Edinb. No. **28**: 135 (1915); MERR. Enum. Philipp. Fl. Pl. **3**: 421 (1923); KUDO, Lab. Sino-Jap. Prodr. 111 (1929); MUKERJEE, Lab. Ind. 35 (1940).

*Ocimum polystachyon* L. Mant. Pl. **2**: 567 (1771).

*O. tenuiflorum* BURM. f. Fl. Ind. 129 (1768); BLANCO, Fl. Filip. 481 (1837), non L.

*Moschosma tenuiflora* HEYNH. Nomen. **1**: 532 (1840); MERR. Fl. Manila 408 (1912).

*Plectranthus micranthus* SPRENG. Syst. Veg. **2**: 691 (1825).

*Basilicum polystachyon* (L.) MOENCH, Meth. Suppl. 143 (1802); DOAN in LECOMTE, Fl. Gén. Indo-Chine **4**: 926 (1936).

Distribution: Tropical Africa, India, Burma, Malaya, Thailand, Laos, Vietnam, Cambodia, Java, and China.

#### Nosema PRAIN

**Nosema capitatum** PRAIN in Journ. As. Soc. Bengal **73**: 20 (1904); CRAIB in Kew Bull. **1911**: 445 (1911); HOSSEUS in Beih. Bot. Centralbl. **28-2**: 433 (1911).

*Mesona capitata* (PRAIN) DOAN in LECOMTE, Fl. Gén. Indo-Chine **4**: 931 (1936).

*Elscholtzia blanda* sensu MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. **27-2**: 498 (1910), non BENTH.

Distribution: Thailand, Laos, Cambodia, and S. Vietnam.

**Nosema cochinchinensis** (LOUR.) MERR. in Trans. Amer. Phil. Soc. n. s. **24** (2): 343 (1935).

*Dracocephalum cochinchinensis* LOUR. Fl. Cochinch. 371 (1790), ed. WILLD. 450 (1793).

*Geniostoma holocheilum* HANCE in Journ. Bot. London **17**: 13 (1879).

*Mesona prunelloides* HEMSL. in Journ. Linn. Soc. Bot. **26**: 267 (1890); DOAN in LECOMTE, Fl. Gén. Indo-Chine **4**: 932 (1936).

*Nosema prunelloides* (HEMSL.) PRAIN in Journ. As. Soc. Bengal **73**: 21 (1904); DUNN in Notes Bot. Gard. Edinb. No. **28**: 134 (1915); KUDO, Lab. Sino-Jap. Prodr. 108 (1929).

Loei, Phu Kradung, 1100-1200 m (Nov. 28, 1965 No. *T* 485), same loc. 1300 m (Mar. 19, 1958 *K. Larsen & B. Hansen*, No. 2287 C). Plain of Makam, near Chanthaburi, 50-100 m (Jan. 12, 1958 *K. Larsen & B. Hansen*, No. 158 C). Between Taktoon and Huoitet (Dec. 15, 1921 *B. Hayata* TI).

Distribution: Thailand, Laos, Vietnam, and China (Hainan).

#### Ocimum L.

**Ocimum basilicum** L. Sp. Pl. 697 (1753); BENTH. Lab. Gen. Sp. 4 (1832) & in

DC. Prodr. **12**: 32 (1848); LEDEB. Fl. Ross. **3**: 334 (1848); HOOK. f. Fl. Brit. Ind. **4**: 608 (1885); HEMSL. in Journ. Linn. Soc. Bot. **26**: 266 (1890); WILLIAMS in Bull. Herb. Boiss. ser. II, **5**: 430 (1905); MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. **27-2**: 501 (1910); KUDO, Lab. Sino-Jap. Prodr. 113 (1929); RIDLEY, Fl. Malay Penins. **2**: 643 (1923); DOAN in LECOMTE, Fl. Gén. Indo-Chine **4**: 919 (1936); MUKERJEE, Lab. Ind. **18** (1940); R. C. BACKER & V. D. BRINK, Fl. Jav. **2**: 639 (1965); MURATA in HARA, Fl. E. Himal. 279 (1966).

Chiang Mai (Dec. 7, 1957 *Tuyama*, No. 57146 TI). Mae Hong Son, between Mae Sariang and Mae La Noi, 300-400 m (Sept. 18, 1957 No. *T 10336*).

Distribution: India, Thailand, Laos, Vietnam, Cambodia, Malaya, China, Formosa, and Polynesia.

**Ocimum sanctum** L. Mant. **1**: 85 (1767); BENTH. Lab. Gen. Sp. 11 (1832), and in DC. Prodr. **12**: 38 (1848); BOISS. Fl. Orient. **4**: 539 (1879); HOOK. f. Fl. Brit. Ind. 609 (1885); MIQ. Fl. Ind. Bat. **2**: 939 (1858); HEMSL. in Journ. Linn. Soc. Bot. **26**: 266 (1890); PRAIN in Journ. As. Soc. Bengal **74**: 699 (1907); OSTENFELD in Bull. Herb. Boiss. ser. II, **5**: 714 (1905); MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. **27-2**: 501 (1910); MERR. Enum. Philipp. Fl. Pl. **3**: 422 (1923); KUDO, Lab. Sino-Jap. Prodr. 114 (1929); DOAN in LECOMTE, Fl. Gén. Indo-Chine **4**: 921 (1936); MUKERJEE, Lab. Ind. **19** (1940).

Prachuap Khiri Khan, Bang Saphan, 0-150 m (Aug. 20, 1967 No. *T 14656*). Khao Chronwan, 30 m (Aug. 18, 1967 No. *T 7643*).

Distribution: S. Asia (Formosa to Malaya), Pacific Islands, Australia, India, West Asia, and Arabia.

### **Orthosiphon** BENTH.

**Orthosiphon parishii** PRAIN in Journ. As. Soc. Bengal **59**: 925 (1890); MUKERJEE, Lab. Ind. **27** (1940).

Ratchaburi, above Tapoh, 250 m (Jul. 9, 1963 *K. Larsen*, No. 10600 C). Thung Kang Yang, 350 m (Jul. 7, 1963 *K. Larsen*, No. 10578 C).

Distribution: Burma, and Thailand (new to Thailand).

**Orthosiphon rotundifolius** DOAN in LECOMTE, Fl. Gén. Indo-Chine **4**: 938 (1936). Ratchaburi, Huai Yang (Aug. 12, 1966 *K. Larsen*, *T. Smitinand* & *E. Warncke*, No. 1511 AAU). Khao Nam Tok, west of Huai Yang (Aug. 10, 1966 *K. Larsen*, *T. Smitinand* & *E. Warncke*, No. 1374 AAU). Nam Tok Huay Yang, near Thap Sakae, 30-200 m (Aug. 19, 1967 No. *T 7750*).

Flowers pale violet.

Distribution: Cochinchina and Thailand (new to Thailand).

**Orthosiphon rubicundus** (D. DON) BENTH. in WALL. Pl. As. Rar. **2**: 14 (1931), Lab. Gen. Sp. 26 (1832), in HOOK. Ic. Pl. **5**: pl. 459 (1842), and in DC. Prodr. **12**: 51

(1848); HOOK. f. Fl. Brit. Ind. 4: 614 (1885); COLLETT & HEMSL. in Journ. Linn. Soc. Bot. 28: 112 (1890); DUNN in Notes Bot. Gard. Edinb. No. 28: 135 (1915); KUDO, Lab. Sino-Jap. Prodr. 116 (1929); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 934 (1936); MUKERJEE, Lab. Ind. 25 (1940).

*Plectranthus rubicundus* D. DON, Prodr. Fl. Nepal. 116 (1825).

*P. virgatus* D. DON, *op. cit.* (1825).

*Lummitzera rubicunda* SPRENG. Syst. Veg. 4, Cur. Post. 223 (1827).

*L. virgata* SPRENG. *op. cit.* (1827).

Chiang Mai, Ob Luang table land, along road from Bo Luang to Om Koi (June 11, 1968 *Beusekom & Phengkhlai*, No. 1134 C & KYO). Phitsanulok, Tung Salaeng Luang, 700 m (Jul. 21, 1966 *K. Larsen, T. Smitinand & E. Warncke*, No. 679 AAU). Ban Mae Pang, 30 km north of Mae Sariang, 400 m (Jul. 11, 1968 *K. Larsen & E. Warncke*, No. 2367 AAU).

Distribution: India, Nepal, Burma, Thailand (new to Thailand), Laos, Cambodia, Cochinchina, and China (Yunnan, Szechwan, and Hainan).

**Orthosiphon spiralis** (LOUR.) MERR. in Lingnan Agr. Rev. 2: 137 (1925), & in Trans. Amer. Philos. Soc. n. ser. 24 (2): 344 (1935).

*O. aristatus* (BLUME) MIQ. Fl. Ind. Bat. 2: 943 (1858); MUKERJEE, Lab. Ind. 26 (1940).

*O. stamineus* BENTH. in WALL. Pl. As. Rar. 2: 15 (1831), Lab. Gen. Sp. 29 (1832), and in DC. Prodr. 12: 52 (1848); HOOK. f. Fl. Brit. Ind. 4: 615 (1885); COLLETT & HEMSL. in Journ. Linn. Soc. Bot. 28: 113 (1890); RIDLEY, Fl. Malay Penins. 2: 645 (1923); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 939 (1936); SLEESSEN in Reinw. 5: 38 (1959).

*Ocimum aristatum* BLUME, Bijdr. 833 (1826); BENTH. Lab. Gen. Sp. 10 (1832) & in DC. Prodr. 12: 42 (1848).

*Trichostema spiralis* LOUR. Fl. Cochinch. 371 (1790), ed. WILLD. 451 (1793).

*Clerodendranthus stamineus* (BENTH.) KUDO, Lab. Sino-Jap. Prodr. 117 (1929).

Ratchaburi, near Phetchaburi, 25 m (Aug. 15, 1966 *K. Larsen, T. Smitinand & E. Warncke*, No. 1621 AAU). Surat, 40 km north of Chumphon, 50 m (Aug. 11, 1966 *K. Larsen, T. Smitinand & E. Warncke*, No. 1457 AAU). Hao Suwat Falls at Khao Yai (June 22, 1963 *K. Larsen*, No. 10310 C). Hao Suwat Fall, 650 m (Jul. 21, 1963 *K. Larsen*, No. 10704 C).

Distribution: India, Burma, Thailand, Laos, Cambodia, Vietnam, Malaya, China (Hainan), Philippines, Borneo, Java, New Guinea, and Australia.

**Orthosiphon tagawai** MURATA in Acta Phytotax. Geobot. 24: 110 (1970).

Herba perennis. Caulis erectus simplex quadrangularis 50-70 cm longus puberulus, internodiis 4-10 cm longis. Folia petiolata; Lamina ovata 4-7 cm longa 2-4.5 cm lata apice acuminata margine serrata basi late cuneata supra parce hirsuta subtus glanduloso-



punctata ad nervos puberula. Inflorescentia terminalia racemosa, racemi simplices erecti laxi, bracteis parvis ovatis acuminatis, verticillastris 4-6 floris, pedicellis 3 mm longis pubescentibus. Calyx campanulatus 3.5 mm longus extus puberulus et punctatus intus glaber bilabiatus, fructifer declinatus 7-8 mm longus, labio superiore rotundato reflexo 2.5 mm lato, labio inferiore 4-dentato subulato, dentibus lateralibus 2 minutis, inferioribus 3 mm longis. Corolla tubo angusto recto 2 cm longo puberulo, labio superiore obsolete 3-4 lobato 7 mm longo 4 mm lato, labio inferiore 7 mm longo. Stamina 4 longe exserta, filamentis glabris. Nuculae ellipsoideae 2 mm longae brunneae.

Chiang Mai, Doi Chiang Dao, 500-600 m (Sept. 12, 1966 *No. T 9855*, Holotypus KYO). Phitsanulok, Phu Mieng Mountain (Jul. 29, 1966 *K. Larsen, T. Smitinand & E. Warncke, No. 509* AAU). same loc. (Jul. 25, 1966 *K. Larsen, T. Smitinand & E. Warncke, No. 882* AAU).

Flowers blue. Filaments exserted about 2.3 cm beyond the mouth of the corolla. Apparently allied to *O. velterii* Doan, but the bracts of *O. tagawai* are ovate and acute.

Distribution: Thailand.

#### Paraphlomis PRAIN

**Paraphlomis rugosa** (Benth.) PRAIN in Ann. Bot. Gard. Calc. 9: 60 (1901) & in Journ. As. Soc. Bengal 74: 721 (1907); RIDLEY, Fl. Malay Penins. 2: 651 (1923); MERR. Enum. Philipp. Fl. Pl. 3: 412 (1923); KUDO, Lab. Sino-Jap. Prodr. 209 (1929); Doan in Lecomte, Fl. Gén. Indo-Chine 4: 1015 (1936); HAND.-MAZZ. Symb. Sin. 7: 922 (1936); MUKERJEE, Lab. Ind. 191 (1940).

*Phlomis rugosa* Benth. in WALL. Pl. As. Rar. 1: 63 (1830), Lab. Gen. Sp. 634 (1834), and in DC. Prodr. 12: 545 (1848); Hook. f. Fl. Brit. Ind. 4: 693 (1885).

*Gomphostemma membranifolium* Miq. Fl. Ind. Bat. 2: 988 (1858).

*G. luzonense* ELM. Leaf. Philipp. Bot. 1: 339 (1908).

*Lamium longepetiolata* Hayata, Icon. Pl. Formos. 8: 92 (1919).

*L. gesneroides* Hayata, l. c.

*Loxocalyx vaniotiana* Lév. in Fedde Repert. 9: 224 (1910).

Chiang Mai, Doi Chiang Dao, 500-600 m (Sept. 11, 1967 *No. T 9808*). Phitsanulok, Phu Rom Rot, one of the peaks of Phu Miang, 1200-1600 m (Oct. 3, 1967 *No. T 11592*). Tung Salaeng, 550 m (Jul. 20, 1966 *K. Larsen, T. Smitinand & E. Warncke, No. 558* AAU).

Distribution: Sikkim, Bhutan, Khasia, Thailand, Laos, Malaya, Philippines, China, Formosa, and Ryukyu.

#### Perilla L.

**Perrilla frutescens** (L.) Britt. in Mem. Torrey Bot. Club 5: 277 (1894); HAND.-MAZZ. in Acta Hort. Gotob. 13: 350 (1939); HARA, Enum. Sperm. Jap. 1: 217 (1948);

MURATA in HARA, Fl. E. Himal. 280 (1966).

*Ocimum frutescens* L. Sp. Pl. 597 (1753).

*Perilla ocimoides* L. Gen. Pl. ed. 6: 578 (1764); HOOK. f. Fl. Brit. Ind. 4: 646 (1885); MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. 27-2: 498 (1910); HOSSEUS in Beih. Bot. Centralbl. 28-2: 433 (1911); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 983 (1936); MUKERJEE, Lab. Ind. 85 (1940).

*P. avium* DUNN in Notes Bot. Gard. Edinb. No. 37: 161 (1913).

*P. ocymoides*  $\beta$ . *japonica* HASSK. in Retzia 2: 36 (1856).

*P. ocymoides* var. *typica* MAKINO in Bot. Mag. Tokyo 26: 77 (1912).

*P. frutescens* var. *japonica* (HASSK.) HARA, Enum. Sperm. Jap. 1: 217 (1948).

Doi Bitcha, near Ban Pasui, SE of Mae Hong Son (Mar. 15, 1958 *Tuyama*, No. 58301 TI).

Distribution: Himalaya (Kashmir to Bhutan), Khasia, Burma, Thailand, Laos, Vietnam, China, Java, and Formosa.

#### **Plectranthus L'HERIT.**

**Plectranthus glabratus** (BENTH.) ALSTON in TRIMEN, Hand-Book Fl. Ceylon 6: suppl. 236 (1931).

*P. coleoides* BENTH. in DC. Prodr. 12: 64 (1848); HOOK. f. Fl. Brit. Ind. 4: 622 (1885), CURTIS'S Bot. Mag. pl. 5841 (1870); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 949 (1936); MUKERJEE, Lab. Ind. 48 (1940).

*Coleus paniculatus* BENTH. in WALL. Pl. As. Rar. 2: 99 (1831), and in DC. Prodr. 12: 78 (1848).

*C. glabratus* BENTH. Lab. Gen. Sp. 58 (1832), and in DC. Prodr. 12: 78 (1848).

*C. wightii* BENTH. Lab. Gen. Sp. 58 (1832), and in DC. Prodr. 12: 78 (1848); WIGHT, Ic. pl. 1433 (1850).

Distribution: India, Thailand, and S. Vietnam.

#### **Pogostemon DESF.**

**Pogostemon fraternus** MIQ. Fl. Ind. Bat. 2: 963 (1858); HOOK. f. Fl. Brit. Ind. 4: 635 (1885); HOSSEUS in Beih. Bot. Centralbl. 28-2: 433 (1911); CRAIB in Kew Bull. 1911: 446 (1911); DUNN in Notes Bot. Gard. Edinb. No. 28: 146 (1915); KUDO, Lab. Sino-Jap. Prodr. 51 (1929); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 976 (1936); MUKERJEE, Lab. Ind. 74 (1940).

*Stachys scaberula* sensu MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. 27-2: 497 (1910).

Chiang Mai, Doi Suthep, 1000-1685 m (Dec. 23, 1965 No. T 3243). Doi Inthanon, interior of Ban Yang (Dec. 20, 1965 No. T 3045). Chiang Rai, Doi Pacho (Doi Langka), 1350-1800 m (Dec. 27, 1965 No. T 3657). Chanthaburi, Khao Soidao, 700-1525 m (Feb.

8-9, 1966 *No. T 7143*).

Distribution: Sikkim, Khasia, Burma, Thailand, Java, and China (Yunnan).

**Pogostemon glaber** BENTH. in WALL. Pl. As. Rar. **1**: 31 (1830), Lab. Gen. Sp. 154 (1833), and in DC. Prodr. **12**: 152 (1848); HOOK. f. Fl. Brit. Ind. **4**: 633 (1885); COLLETT & HEMSL. in Journ. Linn. Soc. Bot. **28**: 114 (1890); CRAIB in Kew Bull. **1911**: 446 (1911); DUNN in Notes Bot. Gard. Edinb. No. **28**: 146 (1915); KUDO, Lab. Sino-Jap. Prodr. 51 (1929); DOAN in LECOMTE, Fl. Gén. Indo-Chine **4**: 973 (1936); MUKERJEE, Lab. Ind. 72 (1940).

Chiang Mai, Doi Suthep, 1350-1500 m (Jan. 9, 1966 *No. T 4474*). Pang Mapha, 800 m (Feb. 27, 1968 *B. Hansen & T. Smitinand, No. 12749 C*). Doi Chong, northern part, 1450-1750 m (Feb. 17, 1968 *B. Hansen & T. Smitinand, No. 12624 C*). Hoet That to Muang Khu (Feb. 16, 1958 *Ogawa, Yoda & Tuyama, No. 216-69 T1*).

Distribution: Nepal, Sikkim, Khasia, Thailand, Laos, and China (Yunnan).

**Pogostemon hispidus** (BENTH.) PRAIN in Kew Bull. **1908**: 254 (1908); MUKERJEE, Lab. Ind. 70 (1940).

*P. parviflorus* var. *hispidus* BENTH. in DC. Prodr. **12**: 152 (1848).

Chiang Mai, Doi Pae Poe, 90 km NW of Tak, 1400 m (Mar. 13, 1968 *B. Hansen & T. Smitinand, No. 12897 C*).

Distribution: Assam, Burma, and Thailand (new to Thailand).

**Pogostemon macgregori** W. W. SMITH in Rec. Bot. Surv. Ind. **6**: 39 (1913); MUKERJEE, Lab. Ind. 75 (1940).

Doi Khun Huai Pong, 1800 m (Mar. 3, 1968 *B. Hansen & T. Smitinand, No. 12772 C*). Doi Chong, northern part, 1800 m (Feb. 19, 1968 *B. Hansen & T. Smitinand, No. 12661 C*). Chiang Rai, Doi Pa Hom Pok, NW of Phan, 2300 m (Sept. 13, 1967 *No. T 9659*).

Distribution: Burma and Thailand (new to Thailand).

**Pogostemon menthoides** BL. Bijdr. 825 (1826); BENTH. in DC. Prodr. **12**: 155 (1848); MIQ. Fl. Ind. Bat. **2**: 963 (1858); KOORD. Exk.-fl. Java **3**: 152 (1912); DOAN in LECOMTE, Fl. Gén. Indo-Chine **4**: 972 (1936); R. C. BACKER & V. D. BRINK, Fl. Java **2**: 632 (1965).

Loei, Phu Luang, 1100-1500 m (Dec. 4, 1965 *No. T 1965*). Phitsanulok, Phu Rom Rot, one of the peaks of Phu Miang, 1200-1600 m (Oct. 3, 1967 *No. T 11583*).

Distribution: Assam, Burma, Thailand (new to Thailand), Vietnam, and Java.

**Pogostemon paniculatus** (WILLD.) BENTH. in WALL. Pl. As. Rar. **2**: 30 (1831), Lab. Gen. Sp. 153 (1833), and in DC. Prodr. **12**: 151 (1848); HOOK. f. Fl. Brit. Ind. **4**: 631 (1885); MUKERJEE, Lab. Ind. 68 (1940).

*Elsholtzia paniculata* WILLD. Sp. Pl. **3**: 59 (1800).

Chanthaburi, Khao Soidao, 200-700 m (Feb. 7, 1966 *No. T 7095*).

Distribution: India, Burma, and Thailand (new to Thailand).

**Pogostemon wattii** C. B. CLARKE in Journ. Linn. Soc. Bot. **25**: 59 (1889); PRAIN in Journ. As. Soc. Bengal **59**: 298 (1890); MUKERJEE, Lab. Ind. 75 (1940).

Chiang Mai, Doi Suthep (Dec. 6, 1957 *Tuyama*, No. 57106 TI). Loei, Phu Luang, 700 m (Dec. 3, 1965 No. T 1042).

Distribution: Assam and Thailand (new to Thailand).

**Pogostemon purpurascens** DALZ. in HOOK. Kew Journ. **2**: 337 (1850); HOOK. f. Fl. Brit. Ind. **4**: 632 (1885); DOAN in LECOMTE, Fl. Gén. Indo-Chine **4**: 974 (1936).

Loei, en route from Nam Thop to Ban Na Luang, eastern foot of Phu Luang, 300-400 m (Dec. 8, 1965 No. T 1971). Phu Kradung, 1000 m (Nov. 27, 1965 No. T 351), same loc. (Nov. 27, 1965 No. T 883). Phitsanulok, Tung Salaeng Luang National Park, 300-600 m (Dec. 11, 1965 No. T 2044).

Distribution: S. India, Burma, Thailand (new to Thailand), and S. Vietnam.

### **Scutellaria** L.

**Scutellaria discolor** COLEBR. in WALL. Pl. As. Rar. **1**: 66 (1830); BENTH. in DC. Prodr. **12**: 417 (1848); HOOK. f. Fl. Brit. Ind. **4**: 667 (1885); KOORD. Exk.-fl. Java **3**: 145 (1912); DUNN in Notes Bot. Gard. Edinb. No. **28**: 179 (1915); KUDO, Lab. Sino-Jap. Prodr. 253 (1929); DOAN in LECOMTE, Fl. Gén. Indo-Chine **4**: 1000 (1936); MUKERJEE, Lab. Ind. 146 (1940); MURATA in HARA, Fl. E. Himal. 281 (1966).

*S. indica* D. DON, Prodr. Fl. Nep. 109 (1825); BL. Bijdr. 839 (1826), non L.

*S. heteropoda* MIQ. Fl. Ind. Bat. **2**: 972 (1858).

Loei, Phu Luang, 1300-1562 m (Dec. 5, 1965 No. T 1610). North ridge of Phu Luang, 1100-1500 m (Dec. 4, 1965 No. T 1229). Pong Pa Paw to Pang Kioh (Oct. 30, 1921 *B. Hayata*, TI). Doi Pui, near Ban Pasui, S. E. of Mae Hong Son (Mar. 16, 1958 *Tuyama*, No. 58629 & 58692 TI). Chiang Mai, Bo Luang tableland, along road from Bo Luang to Om Koi (June 11, 1968 *Beusekom & Phengkhilai*, No. 1141 C & KYO). Muang Len, Ranawng, 150 m (*B. Hansen & T. Smitinand*, No. 11961 AAU).

Distribution: Himalaya (Kumaon to Bhutan), Assam, Khasia, Thailand (new to Thailand), Laos, Cambodia, Vietnam, Java, and China (Yunnan).

**Scutellaria glandulosa** HOOK. f. Fl. Brit. Ind. **4**: 669 (1885); DOAN in LECOMTE, Fl. Gén. Indo-Chine **4**: 1003 (1936); MUKERJEE, Lab. Ind. 143 (1940).

Chiang Mai, Doi Suthep, 550 m (Jul. 23, 1958 *K. Larsen & B. Hansen*, No. 4358 C). Lamphun, en route from Ban Khun Tan to Doi Khun Tan, 1100 m (Sept. 4, 1967 No. T 9134). Plain of Makam, near Chanthaburi, 50-100 m (Apr. 9, 1959 *K. Larsen & B. Hansen*, No. 7226 C). Ban Mae Pang, 30 km N. of Mae Sariang, 400 m (Jul. 11, 1968 *K. Larsen, T. Smitinand & E. Warncke*, No. 2368 AAU). Along the Om Koi Trail, 30 km S. of Bo Luang, 1100 m (Jul. 3, 1968 *K. Larsen, T. Smitinand & E. Warncke*, No. 2030 AAU).

In dry mixed deciduous forest.

Distribution: Burma, Thailand, and Cambodia.

**Scutellaria violacea** HEYNE ex BENTH. in WALL. Pl. As. Rar. 1: 66 (1830), Lab. Gen. Sp. 429 (1834), and in DC. Prodr. 12: 418 (1848); HOOK. f. Fl. Brit. Ind. 4: 668 (1885); HEMSL. in Journ. Linn. Soc. Bot. 26: 298 (1899); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 1007 (1936); MUKERJEE, Lab. Ind. 145 (1940).

Nakhon Si Thammarat, Khao Luang, 720-950 m (Aug. 22, 1967 No. T 8314).

Distribution: India, Thailand, Java, and China (Kiangsi).

### Teucrium L.

**Teucrium quadrifolium** BUCH.-HAM. in D. DON, Prodr. Fl. Nepal. 108 (1825); BENTH. in WALL. Pl. As. Rar. 1: 58 (1830), Lab. Gen. Sp. 675 (1834), and in DC. Prodr. 12: 583 (1848); HOOK. f. Fl. Brit. Ind. 4: 701 (1885); HEMSL. in Journ. Linn. Soc. Bot. 26: 314 (1890); MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. 27-2: 495 (1910); CRAIB in Kew Bull. 1911: 448 (1911); DUNN in Notes Bot. Gard. Edinb. No. 28: 191 (1915); KUDO, Lab. Sino-Jap. Prodr. 292 (1929); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 1036 (1936); MUKERJEE, Lab. Ind. 218 (1940); MURATA in HARA, Fl. E. Himal. 282 (1966).

*T. fortunei* BENTH. in DC. Prodr. 12: 583 (1848).

*T. fulvum* HANCE in WALP. Ann. 3: 270 (1852).

*T. fulvo-aureum* LÉV. in FEDDE Repert. 8: 426 (1910).

*T. kouytchense* LÉV. *op. cit.* (1910).

Doi Chong, northern part, 1450 m (Feb. 18, 1968 *B. Hansen & T. Smitinand*, No. 12637 C). Loei Phu Kradung, 1100-1200 m (Feb. 28, 1965 No. T 482). Between Pang Kioh to Me Ka Chau (Oct. 31, 1921 *B. Hayata* TI). Between Bannkik and Taktoong (Dec. 24, 1921 *B. Hayata* TI).

Distribution: Himalaya (Kashmir to Sikkim), Khasia, Burma, Thailand, Cambodia, Vietnam, and China (Hupeh, Hunan, Kiangsu, Kweichow, Yunnan, Kwangtung, and Hongkong).

**Teucrium shanicum** MUKERJEE in Notes Bot. Gard. Edinb. No. 95: 306 (1938) & Lab. Ind. 221 (1940).

Chiang Mai, Doi Suthep (Dec. 6, 1958 *Tuyama*, No. 57208 & 57217 TI).

Distribution: Burma and Thailand (new to Thailand).

**Teucrium tomentosum** HEYNE ex BENTH. in WALL. Pl. As. Rar. 1: 58 (1830), Lab. Gen. Sp. 674 (1835), and in DC. Prodr. 12: 582 (1848); HOOK. f. Fl. Brit. Ind. 4: 700 (1885); MUSCHLER ex HOSSEUS in Beih. Bot. Centralbl. 27-2: 496 (1910); HOSSEUS, *op. cit.* 28-2: 434 (1911); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 1040 (1936); MUKERJEE, Lab. Ind. 220 (1940).

Chiang Mai, Tham Chiang Dao, 350 m (Feb. 15, 1958 *T. Sorensen, K. Larsen & B. Hansen*, No. 1126 C).

Distribution: Ceylon, India, and Thailand.

**Teucrium viscidum** BLUME, Bijdr. 827 (1826); MERR. Enum. Philipp. Fl. Pl. 3: 409 (1923); KUDO, Lab. Sino-Jap. Prodr. 295 (1929); MUKERJEE, Lab. Ind. 218 (1940); HARA, Enum. Sperm. Jap. 1: 232 (1948); MURATA in HARA, Fl. E. Himal. 282 (1966).

*T. stoloniferum* ROXB. Hort. Bengal. 14 (1814), nom. nud. & Fl. Ind. ed. 2, 3: 3 (1832); BENTH. in WALL. Pl. As. Rar. 1: 58 (1830), Lab. Gen. Sp. 674 (1834), and in DC. Prodr. 12: 583 (1848); HOOK. f. Fl. Brit. Ind. 4: 700 (1885); DOAN in LECOMTE, Fl. Gén. Indo-Chine 4: 1039 (1936).

*T. philippinense* MERR. in Philipp. Journ. Sci. Bot. 7: 100 (1912).

Phetchabun, Phu Miang, 1300 m (Oct. 5, 1967 No. T 11774).

Distribution: India, Burma, Thailand, Laos, Vietnam, Malaya, Formosa, China, Korea, and Japan.

In this paper, 29 genera and 93 species are recorded from Thailand. Phytogeographically, the mountain flora of Thailand is closely tied with that of the Sino-Himalayan region. At the species level, in Labiatae, the Sino-Himalayan elements amount to about 37 % of the total, and they occur at high altitudes of North Thailand. The tropical Asiatic elements amount to about 39 %, and they occur on the plains and lowlands, mainly in the southern part. The endemic species are 9. Pan-tropical elements are 4.